

Periodical

The AMERICAN RIFLEMAN

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in Prizes to Readers of The American Rifleman

First Prize . \$100 Third Prize . \$30
Second Prize . \$50 Fourth Prize . \$20

Fourteen Other Prizes of \$10 Each

These prizes will be awarded for the best stories of shooting experiences or experiments received between March 15 and October 1, 1926. Stories may cover adventures in the hunting field, experiences in target shooting, experiments in gunsmithing or hand-loading—they may deal with any angle of the shooting game from designing a new stock to killing an elephant.

The best story received for each issue will be decided by the editor and his associates.

The winner of the grand prizes will be decided by vote of the readers of the American Rifleman who will be asked to select the best of the stories printed.

For each story printed each issue, \$10.00 will be paid. From these stories the readers will select by vote, the four prize winners.

Read These Rules Carefully

FIRST: Write on one side of the paper only and leave a wide space between your lines. No story must be longer than 1,500 words. The shorter the better.

SECOND: Stick to facts. The American Rifleman does not desire any fiction at this time. Send pictures or drawings to illustrate your story if you can obtain them. If you have a picture of yourself send it with your story. Pictures will count in the selection of stories for printing so as to give them a chance at the grand prize.

THIRD: The Editors reserve the right to reject any and all stories without question or to print as many in any edition as they wish at the \$10.00 rate for each.

FOURTH: Save a copy of your story. **NO STORY ENTERED IN THIS CONTEST CAN BE RETURNED.**

FIFTH: Stories may be sent in at once. The first will be printed in the April 1 number. One or more will be printed in each issue thereafter up to and including October 15. No stories will be considered for the contest if received after October 1, 1926. Voting on the prize winners will begin after the October 15 issue is off the press. Voting will close at midnight December 1. Winners will be announced in the December 15 issue and the winners will get their checks in time for the Christmas shopping.

Don't worry because you are not a writer. The Rifleman staff will "dress up" any story that needs it. Give us the facts and we'll do the rest.

Start writing that story NOW! Get it in early.

The AMERICAN RIFLEMAN

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Aladdin's Lamp in Toledo

By Jack Rohan

*They wanted a range and they got it
By workin' and sweatin' and tryin';
They had no surveyer to plot it—
No money to do any buyin'—
So they borrowed and begged,
Likewise labored and legged,
Till they got all they needed from "muzzle to breach;"
Then they worked like the devil,
And men, on the level,
That range those cops built is a sure-enough peach.
—(From the Gun Bug's Anthology.)*

DOWN in Toledo, Ohio, a few years back, the police authorities made up their minds that the popular notion that a police officer should be a perennial target for the bullets of bad men was more or less bunk. They looked up the statutes and found that there is no law against a policeman shooting back at a bandit. Then they decided that since there was no law against shooting at bandits there probably wasn't any against hitting them and set about to declare an open season on bandits, holdup men and the like. This was in 1923. Col. Gilson D. Light, then director of public safety for Toledo, passed the word to Chief of Police Harry Jennings, who delegated to Inspector Joseph Delehanty, a police officer of more than 25 years' experience, the job of making marksmen out of the policemen.

Inspector Delehanty didn't know anything about shooting and is one of those sensible chaps who doesn't kid himself.

"I didn't know anything about it," he told this writer, "and I knew it would be absurd to try to teach something I didn't know myself. So I called to my aid Sergeant Charles Hennessy, then a patrolman, who had been a sergeant of Marines and had won many laurels in pistol contests of the Marine Corps."

AND that's the story of the excellent shooting of the Toledo police. For Sergeant Hennessy happened to be the celebrated "Spike," a champion of marines, both with his fists and with his pistol. After a few months under his instruction three teams of five men each went from Toledo to the national matches at Camp Perry in 1923 and finished third, fourth and fifth against the best teams in the country, in the police matches.

Then Sergeant Hennessy decided he needed an outside range. He started out to get it. He hammered from the mayor down and back again to get the authority to build it. Inspector Delehanty, Chief Jennings, the director of public safety and a number of others agreed with "Spike" that the thing was needed, but—

"We haven't got the money!"

"What in hell has that got to do with it?" "Spike" demanded to be told. "We've got all kinds of land. We're looking for a range, not a monument."

"Just for that," said Delehanty, "we'll have both. We'll have a range that's a real monument."

So it came to pass that Delehanty and the mayor and "Spike" and the police "gang" rubbed the Aladdin's lamp of real effort and created for the city of Toledo a \$200,000 rifle and pistol range out of nothing at all, except a little spare land in Bay View Park. And it didn't cost the City of Toledo a red cent.

It is the most ornate range in captivity and is provided with accessories and comforts which this writer has found on no other range. The range proper is 150 yards long with target frontage of 42 feet, but its arrangement is such that 300-yard shooting can be easily arranged. It is protected on each side by an ornamental fence of steel and concrete, and is further guarded by barriers of shrubbery set beyond an open space some 75 feet on either side of the fence.

THE target pits are elaborate. Forty-two feet long, ten feet wide and about eight feet deep, they are carefully drained and sheltered, and are provided with underground storage chambers of concrete, protected by heavy concrete and steel roofs covered with several feet of earth. These chambers are so constructed as to be cool and well ventilated at all times and are perfectly drained.

The backstop mound is retained by a stone wall as elaborately buttressed as that of any cathedral. This wall is eighty feet long, and thirty-five feet from foundation to coping. It contains fifteen thousand tons of stone. On its broad top are planted a couple of machine guns captured in the World War.

At the firing points concrete tables are provided for the use of the shooters, these being placed conveniently at the 50, 100 and 150-yard points and so arranged that they can be moved out of the way when not needed. To the left of the 150-yard firing point, which is the end of the range proper, is erected a huge memorial monument of marble and concrete, topped by a globe and eagle. On this is inscribed the names of the men who built the range, the names of the city officials who made its building possible by cooperation and the names of those who donated materials toward its construction. This last list includes every variety of business from steel to nurserymen.



Left to Right—Top—Mayor Mery, Chief of Police Harry Jennings, Inspector Joseph Delehanty; Below—Sergeant Charles "Spike" Hennessy, Shooting Instructor, Toledo's Crack Police Team, the Toledo Range Looking Toward the Butts.

BESIDE the monument stands a tall steel flagpole and in the rear of these is a stone and concrete shooting lodge twenty-two by thirty-eight feet, having a ten-foot porch across its front. This lodge is provided with toilet accommodations for both men and women, the rest rooms opening on either side of a huge fireplace. The interior is lined with delicately tinted brick, and the floor is finished in mosaic, with an elaborate stone centerpiece.

It is finely furnished and makes an unusually fine club house.

From the lodge the builders laid their own sidewalk some three hundred feet to Summit Street so as to make the range easy of access.

Not satisfied with having built an excellent range and an unusually fine shooting lodge, the Toledo builders laid out the land adjoining the range in formal parking with shrubs and flower beds. Inspector Delehanty explained that this was done because they wished to clear the ground surrounding the range so that it could be patrolled easily to prevent unwitting persons from climbing the



fence—as the public will sometimes do—while men were shooting.

"Seeing we had to do it anyhow," he ex-



Above—Rear of Backstop Retaining Wall; Below—Clubhouse and Monument



plained, "we thought we might as well have a good-looking job of it, so we parked it and planted some shrubs."

SO it was that Spike Hennessy got his range and Delehanty got his monument and the City of Toledo got a \$200.00 property for nothing.

And the range is a monument—a monument to what energy and determination will do for an outfit that really wants a range. A tenth of the effort and labor would have given the Toledo police a range that was "good enough." Such a range would satisfy most shooters perfectly, but it happened that

the Toledo men were artists, and to satisfy their desire for beauty as well as utility they went the limit. But they certainly have made it hard for any outfit that claims to be up and doing to explain why it can't promote a few decent target pits and a common mound backstop, with perhaps a frame shelter. It can be done.

A Modern Swats the Ghosts

By Byron E. Cottrell

WHILE reading what Harvey Lovell had to say of the Ballard in the AMERICAN RIFLEMAN of Feb. 1st, I must confess he made me feel a little guilty by his remarks about a class of riflemen that buys every new hi-velocity thing, or new "tear-em-to-pieces"—especially guilty since killing such big game as several red squirrels, and more English sparrows within the past two weeks with rifles like the .250-3,000 Savage and .270 Winchester. The fact that I did such shooting with reduced loads I don't suppose would make any difference. Anyway, I enjoyed reading about those old Ballards a lot. I am not at all familiar with any of the single-shot rifles, although I have shot some of them.

The thing that struck me most as I read of the superiority of the Ballard was the similarity of the important points to those of the Model 1899 Savage. The breech block wedging into place is a lot like the Savage; both will seat the cartridge exactly the same every time; both will seat cartridges that require some forcing the last one-eighth of an inch. The stocks fasten on both rifles the same, and I believe of the two the stock of the Savage is the stronger—there is more surface up against the rear of receiver. If I got it right these are the points that really put the Ballard ahead of the other single-shot rifles for target work.

Now it looks to me as if the Savage would be just as good an action for the fine target rifle as a Ballard—at least so far as the accuracy of the action, or rifle, was concerned. Of course, the Savage would only be adapted to center-fire ammunition. I can't see where it would make any difference whether the case was a .25-25, a .25-35, or a .250-3,000. A new barrel could be made with any twist, throating, length, and weight, and the case could be loaded with any load that could be used in the single-shot rifles. If the stock did not suit, Hoffman or Griffin & Howe could make one that would, and I believe some good gunsmith could perfect a set trigger for this action—and likely would if there was a demand for them.

Why wouldn't such a rifle equal any Ballard for accuracy and looks, and have the added advantage that it could be used as a repeater if the shooter wished.

As most of you know, one such a rifle has been made up for Major Townsend Whelen in .250-3,000 caliber. It is used only with reduced loads, and, judging from the targets published some time ago in the AMERICAN RIFLEMAN, one would have to try out a few Ballards before finding one that could beat it.

And unless one were wedded to the lever

action, or was going to use the rifle a lot with telescope sight, I see no reason why the same thing could not be done with such rifles as the Springfield, Mauser, Winchester .54, or even the Krag or Savage Model 1920. We will say, for instance, that your favorite caliber is the .28-30 Stevens, but you can not find a Ballard action to build up such a rifle on. Get a Springfield action, have your favorite barrel maker (I believe that Peterson would make a soft steel barrel any caliber) make a fine target barrel of .28 caliber of the weight you want, and a twist to suit the bullet you will use—say, one turn on 14 inches, and the barrel throated for this bullet seated out of the case so as to give the finest accuracy. Then have this barrel chambered for the 7 mm. case.

You need never use it as a high-power rifle just because it uses a high-power case, and of course you shouldn't shoot high-power loads in a soft-steel barrel. You would never have any trouble to get new cases, as you might with a .28-30 Stevens, and the heavy 7 mm. cases would be almost everlasting when used with reduced loads only. What is the diff whether you shoot a .28-30 load from a .28-30 case or a 7 mm.?

Except for sentimental reasons wouldn't a modern rifle meet any requirements of the target shooter as well as an obsolete one? Now I am going to close by stating that I don't know anything about it. I am not a target shot, and therefore do all by shooting with practical guns. But just as a looker-on I can't see why the modern rifle actions of the "dime-a-roar" and "tear-'em-to-pieces" (an accurate name, too) isn't really just as good as the old Ballard.

A TIP FOR SPRINGFIELD SHOOTERS

The Director of Civilian Marksmanship has forwarded a 5-shot target sent him by James V. King, secretary of the Fifth City Rifle Club of Cleveland, Ohio. The target was made at 75 feet, on Jan. 6, 1926, in the sitting position, by E. C. Lenz. Mr. Lenz "rolled his own" ammunition, using old cases, 13 grains of No. 80 powder, reasonably ancient primers and a 180-grain

Bond bullet. Mr. Lenz shot a remodeled Springfield with 1915 barrel in fair condition, using iron sights on an indoor range.

In connection with the use of "home grown" fodder for the Springfield Mr. King writes:

"The cost of loading one hundred cartridges with No. 80 powder and cast bullets is as follows, old cartridge cases being used:

100 primers	\$0.25
100 powder charges. .	.13
100 cast bullets.....	.25

Cost of 100 reduced loads.....\$0.63

"This gives the handloader an almost un-

.505 Gibbs and .41 Colt

By Chauncey Thomas

AFTER reading the classified ads. (first, as usual) I scouted through the reading matter of the belated January 1 issue, with both profit and pleasure. May I make a few disconnected remarks?

Mine good friend, Capt. Askins, has had me shooting the 505 Gibbs Hoffman rifle a la prone rest. Not guilty. If I were, I'd be dictating this instead of tapping it out on a typewriter. I shot most of the big Hoffman guns for that Prince of Gunmen, Harry Snyder, who was the power behind the throne of the Hoffman Kingdom, but recently left them largely because he lugged them over 1,500 miles out here to Denver from Cleveland for that purpose, and, secondly, because I wanted to see if I could find a rifle that kicked enough to please me. I found it—the .505 Gibbs, with 525 gr. bullet and 105 grs. Hi-Vel powder, out of a 26 inch, 10½ lb. rifle. Estimated recoil over 80 ft. lbs. Probably nearer 100 ft. lbs. I think that is about three times the .405 Winchester factory outfit, and fully four times the regulation Springfield come-back.

I did not shoot the .505 Gibbs prone. I shot it from a seated rest, so as to give a spring-back to my shoulder. This is important, I think, because some one less experienced with the big rifles may think that as I have shot the .505 Gibbs prone, he will at least risk one prone rest shot with it, and if he does he probably will have a broken shoulder. To prevent such an accident, I am anxious to have this correction made as soon and as publicly as possible.

What C. T. Really Did

What I did with the .505 Gibbs was from a seated rest to put 5 shots with open sights at 100 measured yards into a square of 2¼ inches. The same day I fired 3 shots into a 4-inch group at 20 yards offhand in 9 seconds, which is about as fast as I can fire a Springfield under the same conditions, as I am a slow man with the bolt guns. Was wet nursed on the levers in the '80's. Winchester, of course. A good bolt shot can handle the .505 Gibbs readily offhand at the rate of a shot every two seconds.

The actual physical recoil of the .505 Gibbs is not what upsets a man; it is the muzzle blast—the explosion. Major Whelen recently expressed it exactly about this rifle, when he said the effect was like a series of heavy blows from an 8-ounce boxing glove; the result was to slowly put a man to sleep.

I found the .505 Gibbs accurate, at least as accurate as the usual hunting rifle. I can easily keep it in an 8-inch bullseye at 200 yards with open sights, and I think it might

be nearly as accurate as the .45-70 at from 600 to perhaps 1,000 yards. At least I am willing to bet a dinner that on a windless day I can keep 10 shots with the .505 Gibbs from seated rest on a 5 ft. bullseye at 1,000 yards. If a man has nerve enough to shoot it, the .505 Gibbs is as accurate for practical game purposes as the .35 Autoloading Remington, or the Krag, or the .45-70, or the sporting Springfield (with its less weight than the military Springfield) and the 220 factory load.

What Was Shot From Rest

I did shoot the Hoffman .404 from a prone rest, and that is my personal limit in guns for that lazy amusement. Five prone shots numbed my shoulder with the .404 Hoffman. I shot it again prone, with the 300 gr. bullet. This is a very accurate rifle, if you hold it still. No rifle is accurate if it is big and muley enough to make a man bow gracefully just before it explodes.

I shot the Hoffman .375 prone, and the Hoffman .30 prone. These latter two are not noticeably different in recoil from a military Springfield. Each is a very accurate rifle. I think the .404 is as big a gun as it is practical to shoot under various conditions. The .505 Gibbs, unless held just right, probably would severely injure a man just when he needed all his powers—a snapshot, when in trouble, for example.

That is, of course, in a 10 lb. gun. I think the .505 Gibbs should not be made in less than 12 lbs. weight, and never with less than a 24-inch barrel, and a 28-inch barrel would be better by far, to cut down that stunning muzzle blast.

I found this same muzzle blast in the Super-Smith 12-gauge duck guns with the 3-inch Super-X loads. The actual come-back of the shotgun was not as severe nor as swift as the .505 Gibbs recoil, but in each case the muzzle blast soon gave me a headache. Any one who shoots the Super-Fox or the Super-Smith duck guns with the 3-inch super-shells need not fear the .505 Gibbs. Before buying the .505 Gibbs, better borrow one of these shotguns and see how it goes.

I don't mean just duck and jerk, one or two shots, but try a box of shotgun shells, and hold each one as one would draw the proverbial bead with a .22 rifle. Some men can do it; some are not born that way. Incidentally I find that the smaller and especially the lighter the man, and the lighter he holds the big guns the less he feels the actual recoil. No matter how one holds the guns itself, the muzzle blast is always the same, of course.

limited amount of practice with the service rifle at very small cost. These loads are especially valuable for rapid-fire practice,

as they do not have the damaging effect on the rifle barrel of full loads, when used for a great amount of rapid-fire practice.

Samuel E. Tobias, Xenia Gunsmith

By W. W. McGowan

WERE you ever dizzy? Two things contributed to making the writer dizzy recently. One of these was the winding road we drove over getting to the home of Samuel E. Tobias, gunsmith. Down in the country on R. R. 10, Xenia, Ohio, we at last found his farm with shop located in front side yard. The other thing to make our head whirl was the array of guns in his shop. Guns, guns, guns everywhere. Long guns, short guns, large guns and small guns, rifled guns and smooth bores, they were all there. As you can see in the photo, Mr. Tobias' workshop would drive a housewife distracted.

Having met Mr. Tobias several times before, we were invited to make ourselves at home. Our idea of "at home" was to examine as many of the guns as possible, so we got busy. Of particular interest was the '86 Winchester which Mr. Tobias is shown working on. This was with "Teddy" on his African trip. Being an admirer of Teddy, we naturally enthused over this gun! Next to command our interest was a S. A. Colt .45. This gun was carried by a certain U. S. captain. It had notches in the grips. Mr. Tobias solemnly assured us that each notch represented the demise of a Moro chief.

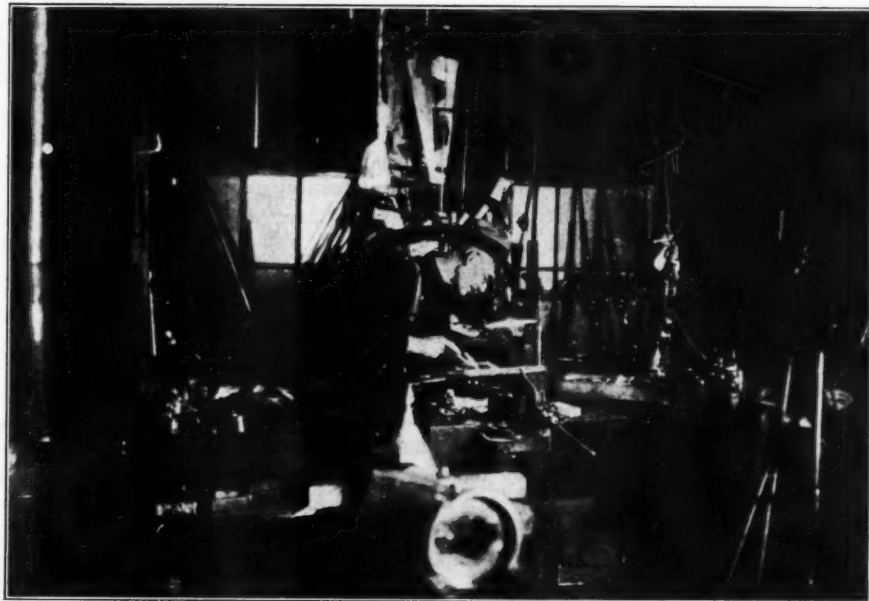
To enumerate all the interesting guns in that shop would take a year. "Tobe," as he is known to his friends, says it will take longer than that to get through working on them.

Mr. Tobias, who is known wherever fine gun work is known, is a fairly good looking chap 61 years young. He is the father of six children, four of them boys. None of the boys follow gun-craft. Mr. Tobias was born within one-half mile of his present home. He has always been a gun "nut." When four years old he whittled out a wooden pistol with his dad's knife. Next came a wooden cross-bow. He didn't say whether or not he used the same knife. Next was a long bow with which he bumped off woodpeckers. His first gun was an old English Tower musket with which he killed 43 rabbits the first year. (Caught them on the nest, we think.)

IN 1882 he made his first stock for sale.

Then he worked on muzzle-loaders, resighting, dressing up the muzzle, etc. Next he made new muzzle-loaders, and then started reboring .22 rifles into .25 caliber.

"Tobe" is the man who "put the tube in the rifle" way back in 1900. Here's how it all came about. C. T. Harner, "the gun-stock man," asked Sam one day why he could not bore out a barrel and put in a tube, then rifle the tube! Sam said it could be done and C. T. said he would get him all the work he could handle, and to quiet Sam he sure started something! His first job went to a man in Columbia, South Carolina. The first pistol he made for sale was a muzzle-loader. This gun is still owned by Mr. Keenan of the



Above—Samuel Tobias in His Shop.
Below—Mr. Tobias Showing Roosevelt's Rifle to
C. T. Harner.

Manhattan Gun Club, New York City, who wrote in five years ago wanting some more made.

One gun which caught our eye, and we are truly glad it did not catch us anywhere else, weighs 23 pounds! It is a .38-55 with hex barrel. Has all the trimmings which went with the old style target rifle of that day. Even has a cross shelf at the muzzle to secure perfectly plumb front sight, and we think maybe also to help hold up about 17 of that 23 pounds.

Now, fellows, here comes the best part of the whole story—Ford parts make the best

repair parts for your guns! (Page Henry.) The writer, who earns his daily beans selling Fords, thinks Tobe handed out that last just to make us feel good, but were assured that while they were harder to work, they made the best parts. He has never had a repair part taken from Lizzie's anatomy come back as defective. How's that? Old Ford axles make real pistol barrels, too—all you have to do is drill, rifle, fit action, sights, grips, etc., and there you are! Step on the gas, boys, we're off!

NOW, here is something worth remembering. After some persuasion and soft soap on our part we got Tobe to tell us how he finishes a stock.

First, follow directions in "Amateur Gunsmithing" (\$1.50 to members of the N. R. A.), relative to sanding down. He stressed the point of forced drying between sandings.

Should be dried out over a hot fire or stove as quickly as possible without burning the stock. Then, when through drying, when the stock will remain perfectly smooth after wetting and forced drying, fill with a filler of corn starch and powdered pumice stone, equal parts, mixed with Japan and turpentine. Let this dry hard, then sand down smooth. This will fill all the pores of the wood. Then oil with boiled linseed to which has been added 20% turpentine. Rub each application in thoroughly with the hand. For best results this should be done every day, using little oil, and lots of rubbing. Directions say to rub as above for three months—suit yourself. Then do your checking, not before. Use little oil to finish off, checking if you object to the finish it then has.

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JACK ROHAN, Editor.



SAVE "OLD IRONSIDES"

REAR ADMIRAL PHILIP ANDREWS, commandant of the first naval district, and a fine old seadog, is passing the hat, as chairman of the National Committee of the Save Old Ironsides Fund, in order that the frigate Constitution may be reconditioned and preserved to future generations, a symbol of the spirit that made this country a republic.

At first it seems a crying shame that the shipmate of Dewey, "Fighting Bob" Evans and Hobson should be reduced to the business of taking up a collection to preserve for posterity the old hulk that houses the memory of the highest traditions and finest courage of America on the sea.

But, on second thought, it is fortunate an appeal has been made to the public, so that those who enjoy the safety and prosperity bought with blood and iron by the men who sailed the Constitution and her sister ships may say whether they believe the valor of the past worth the tribute of the price of a few movies or whether they are willing that the last memorial of American sea-supremacy shall be scuttled.

If the funds to save "Old Ironsides" are forthcoming from popular subscription, those of us who do revere the past may rest secure in the knowledge that the heart of America is sound, that although we are a fast-living, thoughtless, pleasure-loving people, we retain the reverence for valor that is the spark to rekindle that valor in the day of national peril.

If, on the other hand, there is no response to the appeals for "Old Ironsides," if no dimes or dollars trickle into the fund to perpetuate the memory of the "iron men who sailed wooden ships," then it is fitting that "Old Ironsides" be towed to deep water and sent to an honorable grave by a few well placed shells.

A people who will not contribute to retain a relic of high valor is a people without respect for the past and without hope for the future.

Such a people do not deserve to possess a memorial of the courage that kept the American flag flying above the Constitution, in the day when America was a power on the sea, not because of its wealth, but by virtue of the valor of its seamen.

* * *

THE SPIRIT OF WILLIAM TELL

IN a recent issue of the AMERICAN RIFLEMAN was printed a translation of an article which appeared in a Swiss publication. The author pointed out that the Swiss, having defeated the Americans in 1925, must strain every nerve to retain the rifle championship of the world. He declared it would be a national calamity to lose it. He urged every man and boy to perfect himself in the use of the rifle so that it would not be lost. All in all, the writer appeared to regard the retention by the Swiss of the

rifle championship of the world a matter of most grave importance.

The Swiss take their rifle shooting seriously. And because they do, it is a matter of historic fact that other nations have taken the Swiss ability to shoot seriously. When Europe was in flames a few years ago; when treaties were scraps of paper; when hobnailed militarists were trampling the rights of neutrals, nobody tried to violate the sanctity of Swiss soil. Swiss marksmanship was taken seriously.

The Swiss national hero is William Tell. Tell, shooting a crossbow, proved that a straight-shooting people could survive despite the whims of despots. The Swiss have taken the hint and survived.

Davy Crockett, John Bowie or Kit Carson, were every whit as brave as William Tell, and just as good shots. But when some boy wants to emulate them he is promptly suppressed by our pacifist complex and told that he mustn't play with naughty guns—they might give him the killing complex.

The Swiss boy gets a rifle with his first pair of pants and the Swiss have fewer crimes of violence than any other people.

If the Swiss had been forced to mobilize in the blazing days of the World War they wouldn't have had to spend a minute teaching their troops how to handle their rifles. They wouldn't have had men in the front line trenches who couldn't reload their weapons until a sergeant came along to do it for them. They wouldn't have wasted much ammunition. They keep faith with William Tell.

But America doesn't keep faith with Crockett, Bowie or the Men of '76. American boys who knew nothing of firearms died in 1917-18 because they did not know; because there was not time to teach them. Yet, in the face of that lesson, misguided folk today are making a drive on shooting throughout this country. Protests against teaching school-boys to shoot are flowing in on educational officials and on members of legislative bodies. Complaints are being made that the noise of rifle ranges disturbs the nerves of "peaceful people." A concerted drive to suppress shooting is under way. "Teaching of shooting," the pacifists say, "breeds the war spirit."

Who can remember when the Swiss had a war?

Let us take a leaf from the Swiss and make ourselves a nation of riflemen. Let us not kid ourselves into thinking we can shoot, merely because with the best of equipment and a hand-picked team we have on occasion beaten the Swiss. We may do it again—with superb equipment and the best shots we can find. But until shooting in this country becomes a national sport, until shooting ranges become as common as baseball fields, a victory by a hand-picked team of experts will be an empty one. Because, there never was a time, even when our team beat the Swiss, that the Swiss couldn't have picked at random a thousand marksmen from their cantons who would have trimmed any thousand shots we could have scratched up in this country to a fare-you-well.

The Swiss are a nation of riflemen. The Americans can be if they will suppress the pacifists, quit kidding themselves that all Americans are "natural-born shots" and get out and learn to shoot.

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Telescope Sights For Hunting Rifles

By Townsend Whelen

DOPE BAG correspondence for the past two years has shown that there is a whole lot of misconception about telescope sights for hunting, and a lot that needs clearing up about them. Also I fear that a lot of fellows are spending good money on such scopes and not getting what they had hoped.

It is not possible to treat of hunting telescopes intelligently without comparing them with target telescope sights. Our American target telescopes have long, thin tubes. Optically they have a rather small field of view, a small exit pupil, and some of them have a short eye relief. These characteristics are not a disadvantage for target work, nor for woodchuck shooting or squirrel hunting. The new models are excellent, and I do not believe that we will be able to improve much on them. I think that target telescope sights have about reached their ultimate development.

But the target telescope sight is no good for big game hunting, and the reasons why it is not good will indicate the difference between

the positions so your eye does not instinctively come to exactly the same place and find the exit pupil immediately. Instead, when the target telescope is thrown to the eye you will find that the eye has missed getting in the exit pupil and you don't see through the telescope. As a consequence you have to raise or lower your eye, or move it to the right or left again, taking up precious time with big game on the move. The combination of small field of view and small exit pupil make the target telescope entirely too slow under the conditions very often encountered in the big game fields.

THE target telescope has a long tube, making it much more liable to damage in the rough and tumble of big game shooting than is the short and sturdy tube of the hunting scope. The target mountings are also not sturdy enough to stand the inevitable falls and blows. Target telescopes usually move forward with recoil after each shot, and have to be pulled back by hand to the firing position for a

wide field you can hardly fail to find your object even if it is moving. Using such a scope is like using a Lyman sight with a 1-inch aperture inside of which you see everything slightly magnified and more clearly defined. Such a sight, properly mounted on the rifle, is quicker than any metallic sight because, being larger with much more latitude, you catch the object quicker with it, and having caught your object you have only to bring one sight, the reticle, into line with it. Remember that the exit pupil or line of sight of metallic sights is like a very thin thread without height or width. You have to first get your pupil in that thin thread, then you have to line up the object and the two sights with it, and correct inaccuracies in alignment of all three things, and all this takes more time than the act of aiming with a good hunting telescope.

Before the war many hunting telescopes were poorly constructed. Their lens cells would not stand recoil, they were liable to all kinds of optical errors, and their methods



Fig. 1

typical target and hunting telescopes. The field of view of the target telescope being relatively small, when you throw your rifle to your shoulder you do not always catch the object you wish to hit in the field, and you have to raise or lower the muzzle, or move it to the right or left a little to get the object in the field before you can bring the reticle to bear on the object. This takes time, and thus almost prohibits snap shooting, rapid fire, or shooting at moving objects, all so necessary in big game hunting.

The target telescope has a small exit pupil. That is, the pencil of light coming through the eyepiece, and into which you must get your eye to see through the instrument, is small in diameter. This makes little difference on the target range where you stand on level ground and assume a position with which you are thoroughly familiar in every detail, including skill in placing the cheek just right on the comb of the stock. But in the hunting field the character of the footing and many other conditions make endless small variations of

second shot, thus again making them too slow for rapid fire. If the target telescope has a magnifying power above 6 diameters its unsuitability for big game shooting is accentuated because the field of view is smaller, the exit pupil is smaller, and the high-power glass requires to be carefully focused for different distances to eliminate blur and parallax.

Now we come to hunting telescopes. A typical hunting telescope has a short, sturdy tube with large lenses, particularly a large eye lens. It has a field of view which embraces a circle from 10 to 15 yards in diameter at 100 yards range. It has an exit pupil which is a quarter of an inch or more in diameter, and its eye relief is from 3 to 3½ inches long. As a consequence when you throw a rifle with hunting scope to your shoulder your eye instantly catches the field of view because the exit pupil is so large that you can not fail to get your eye into it the first time you try (provided that the comb of stock is right, which is very important as we will see later). In the great big,

of focusing and eliminating parallax were very crude. Some such telescopes are still being sold, particularly among the cheap materials being exported by Germany, but the modern products made by Zeiss, Goerz, Hansoldt, and Belding and Mull leave very little to be desired. These are all excellent and a choice between them must be based upon personal tastes subject to the qualification that the field of view at 100 yards should not be less than 10 yards, the exit pupil not less than 7 mm., and the eye relief not less than 3 inches. If these properties are present the magnifying power is relatively unimportant.

GOOD hunting and target telescopes have certain properties which indicate a few of the reasons why we find them useful on rifles. Thus, aside from their magnifying power, they increase the clear definition of the target and enable us to aim with less error than with metallic sights. The error of hunting metallic sights is probably about 1½ inches for each hundred of yards range,

and that of the best target metallic sights about half as much. The error of aim of a number of modern telescope sights with the best reticules is practically nothing. But there are some German reticules used on hunting telescope sights with which the error of rapid aim is very considerable, but we will discuss this effect of the reticule later.

Another optical quality of the telescope sight that is very valuable to us riflemen is the ability to see into dark places with it. Thus we can often see game clearly amid leaves and trees, or back in the dark beyond the edge of woods where we could not see it at all with the naked eye. In addition, low power, wide field glasses, like modern hunting telescopes, actually make the object and scenery viewed through them appear brighter and in better light than when viewed with the eye alone, and thus we can often see to shoot in poorer lights than we can with metallic sights. Telescope sights are, of course, no good in foggy weather, and personally I do not think that they are good for very quick shots at short range. For example, I would not use one for hunting Virginia

relief this means that the eye lens must not be closer than $1\frac{1}{2}$ inches nor farther than $4\frac{1}{2}$ inches from the eye when the standing, sitting, kneeling, and prone positions are assumed. It is an easy matter to determine such eye lens position, but it is usually very difficult to mount the telescope on existing rifles so that the eye lens will have this position, and this is the greatest difficulty that we are up against today.

4. The reason why we have a comb on our stocks is to support the head and face while aiming and thus hold the eye steady in the line of aim. If you can not hold the eye steady in this line you can't aim—that is all there is to it. Modern experience in having hand-made stocks fitted to the owner has shown that there is a big advantage in having a high comb. For most men a drop at comb from line of sight of $1\frac{3}{4}$ inches is ideal, 2 inches is fair, $2\frac{1}{8}$ inches can be stood, but as much as $2\frac{1}{2}$ inches often results in the head and the whole act of holding being so unsteady that the eye will not stay in the line of aim exactly for more than a fraction of a second, and the whole position is un-

steady. The effect of a low comb is inability to hold hard. Thus we have another specification for the mounting—it must hold the telescope low down near to the comb, a thing very difficult or impossible to accomplish on many rifles. Or else the comb of the stock must be raised to approach the center line of the telescope at the lowest position in which the telescope can be mounted. Raising the comb high enough is impossible in some bolt action rifles because it would interfere with the withdrawal of the bolt.

5. The rifleman must be prepared to pay quite as much for the mountings of a hunting telescope sight as he does for the telescope itself. Truly the long, thin, sliding tube of the target telescope permits us to avoid a lot of trouble and solve a lot of problems. We can place both the mountings on the barrel and still the tube will be long enough so that it will extend back over the breech action and bring the eyepiece at the right distance from the eye. We can make the mountings low so that the center of the telescope comes to within a decent distance above the comb, and if this low position interferes with the operation of the bolt on a bolt action rifle, or the

extraction of cartridges and fired cases from the chamber of a single-shot rifle, we can push the tube forward between shots to clear the action. On bolt-action rifles we can fit a special stock with a high comb that just misses the cocking piece when the bolt is drawn to the rear, and the three best types of our target telescopes can then be mounted so low that the distance from comb to line of aim is about $2\frac{1}{8}$ inches, which is not so bad. Or on single-shot rifles we can do as many of our small-bore riflemen are doing—have a special stock made which brings the comb $1\frac{1}{2}$ to $1\frac{3}{4}$ inches below the center line of the telescope.

This latter method is ideal because it very materially increases the ability to hold hard, and hence tends to much higher scores and relieves the rifleman of fatigue. Figure 1 shows a telescope so mounted. Our target telescopes are thus not only very satisfactory, but they can be mounted in a satisfactory manner on all rifles which eject their cartridges to the side. No telescope sight can be satisfactorily mounted on a top-ejecting rifle. An offset mounting is entirely unsatis-



Fig. 3

factory because the face can not maintain contact with the comb, and hence the rifle can not be held steadily, nor can the eye be held steady in the line of aim. No equipment will enable you to hit if you can not hold and aim steadily.

deer in the thick woods of our Northeast. They are constantly subject to injury from rough treatment, and hence a hunting telescope should always be detachable so that it need only be placed on the rifle when one is expecting to use it.

WE now come to the very important and complicated matter of mountings and methods of placing the telescope on the rifle. To make this clear to you, I must begin with certain principles.

1. The reason why we place a hunting telescope sight on a rifle is to insure accuracy and rapidity of aim, and to increase the percentage of cases in which we can aim (light and background).

2. If we want accuracy we must be able to adjust our telescope so that the point of aim and point of impact will coincide at any desired range. As the sight radius (distance between mountings) with the telescope is very small, the only method that can be relied on is that of micrometer adjustment.

3. The mounting must place the eyepiece of the telescope in correct relation to our eye when the eye is in the aiming position. With a modern telescope with 3-inch average eye

factory because the face can not maintain contact with the comb, and hence the rifle can not be held steadily, nor can the eye be held steady in the line of aim. No equipment will enable you to hit if you can not hold and aim steadily.

NOW turn to the hunting telescope sight and see what a difficult problem we have to mount it correctly. The tube being short, we can not place the mountings on the barrel and have the eyepiece come near enough to the eye on a magazine rifle. The tube being stationary, we can not mount it low down and push it forward when we load, but must mount it high enough to escape the turn-up of the bolt handle. When we mount it in this way the large diameter of the eye lens increases the distance between the line of aim and the comb to a minimum of about $2\frac{1}{2}$ inches, which is not conducive to hard holding nor to accuracy of aim. Thus extreme accuracy of fire, the very thing we hoped to accomplish by fitting a telescope sight to our rifle, is not attained.

On magazine rifles we are forced by the short tube to attach the mountings to the breech action or receiver, and there is hardly a receiver on which we can find a suitable point at which to attach a mounting. Moreover, the rear of the tubes of hunting telescopes are funnel shaped to accommodate the large eye lenses, and the rear mounting must go forward of this funnel-shaped portion, which usually means that the rear mounting can not be placed on the bridge of the receiver and still have the eyepiece at the right distance from the eye. It is true that the

Germans do place the rear mount on the bridge of the receiver, but this makes it impossible to use the telescope in a decent prone position, for the eyepiece is too near the eye, and in all other firing positions the head has to be held so far back that the positions are constrained and unsteady, and you can not get the accuracy you thought you were going to obtain when you had the telescope fitted, because you can not hold steady due to the constraint.

I HAVE puzzled and worked over this problem of mounting a hunting telescope sight on a magazine rifle for years. I have tried almost all of the schemes, and have had many expensive mountings made to order. To date, on a conservative estimate, my experiments have cost me at least two thousand dollars. My conclusions are that to mount present telescopes in an entirely ideal manner is impossible without an entire redesign of the

scope on such position in relation to the rifle barrel and the stock that the aim will be steady, the holding hard, and which will permit the breech mechanism to be operated efficiently, readily, and rapidly. Anything less than this makes us wish and strive for something better.

Inventors have been constantly working on the problem, but most of them have not understood the principles involved, nor the requirements of the riflemen, and there have been many mountings evolved which have been absolute failures, but still continue to get the good cash of the uninformed. All the German mountings are in this class. There are several domestic mountings in which the attachment to the rifle is at but one point, and from this point the telescope extends without further support, over the rear of the receiver. The least wear in that one attachment will result in a change in the alignment of the telescope perhaps as much as

IT should be understood that in mentioning the failures that they are not by any means based on theory, but are the result of many extended trials. There is little if any difference between the requirements of mountings for hunting and military telescope sights. The Ordnance Department has been experimenting continuously with military telescope sights and their mountings since about December, 1917. Satisfactory telescopes have been developed, but dozens of different types of mountings have been tried without finding one which is thoroughly satisfactory. In the course of these tests the Department has, however, proved the uselessness of a great number of different schemes. Some of these tests have involved months, including the firing of thousands of rounds. The tests have been encouraging, however, in that several types of mountings have been developed which promise success if certain small defects can be eliminated.

I have had all this Ordnance experimental work available for my guidance, and in addition I have of course kept track of the work of all other experimenters in this field, and everything which has been developed by our commercial firms, and to date perhaps the best makeshift for the hunter that I have been able to assemble is shown in Figure 2, consisting of a solid frame Model 1899 Savage action with special .250-3,000 barrel, special stock with very high comb, and a 3-power Belding and Mull hunting telescope with the Belding and Mull "H" mount. It would perhaps be better if the rear adjusting screws were replaced with the screws of their regular "D" mount, thus making it possible to more accurately record the elevation and windage adjustments. This is not such a bad arrangement, although the opening on top of the receiver limits the places where the sight bases can be placed, and in this case has resulted in compelling a position of the eyepiece just a little too near to the eye. Also the mountings are not quite as rugged as is desired in a hunting rifle, although they are much better in this respect than the typical target telescope sight mountings. But the most serious limitation is that of the rifle itself, the breech action being necessarily limited to cartridges having rather low breech pressure. The effect of using this combination of rifle and sight is that in the prone position one is constantly wishing that he did not have to hold the head so high up and the eye so far back. If he could only let his face rest down hard on the comb and his eye go forward he could hold much harder and his position would be much steadier. Offhand this is not noticed so much, and the combination is much better.

Another fairly satisfactory extemporization is shown in Figure 3—a Springfield sporting rifle, a Hensoldt 2½ power telescope sight, and the Noske mounting. Elevation is obtained by moving the reticule of the telescope, and windage by the rear screw on the mounting. The necessity for avoiding interference from the upturn of the bolt handle has required the telescope to be mounted a



Fig. 2



Fig. 5

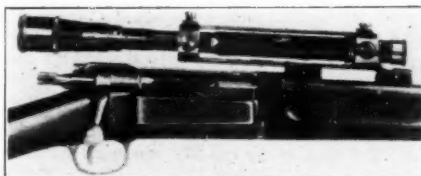


Fig. 4

one to five yards at 100 yards range, and such wear is sure to come. Adjusting such a mounting will require so many shots that the barrel will be about half worn out before it is accomplished. A blow or pressure on the rear end of the tube will probably throw the whole telescope permanently out of alignment.

Then there is a spring which slides into the rear sight fixed base of the Springfield, extends to the rear, and is held by a tenon and the spring action to the top of the bridge of the receiver. The mount bases can be secured anywhere to the top of the spring. On first glance it appears excellent to insure the eyepiece being located at the right distance from the eye. But the bridge is so shaped that no tenon will positively assume a fixed position, and the fixed base is constantly wearing and getting upset, so the spring does not remain positively and accurately located at either end.

rifle. I think that I am right in saying that the optical principles necessary for a hunting telescope do not permit of redesign of the tube if the size and shape of the telescope are to be kept within reasonable and practical limits, although it is possible that some day an optical engineer may design a prismatic telescope and mounting which will be entirely satisfactory. By "entirely satisfactory" I mean an accurately and readily adjustable mounting which will locate the tele-

little too high above the line of the comb, but the eyepiece is at the right distance from the eye. The Noske mounting is not an adjustable mounting in the true sense of the word. It may take anywhere from one hour to three days on the range to get the scope adjusted right for one load and one distance. Thereafter it maintains this adjustment better than any mounting that I know of; provided that you do not touch the screws. I carefully adjusted this particular rifle and scope for 200 yards over three years ago. Each time in making changes which led to the final adjustment I was careful to screw the adjusting screws up tight with a pair of pliers. As a consequence, after I finally found an adjustment which was absolutely correct I did not have to touch the screws again because they had already been screwed up tight enough to hold indefinitely.

Since then I have had the rifle on the range many times, and every time I find that the adjustment is still correct. The scope comes on and off the rifle readily, and the parts have been so hardened and are made of such good material that I do not think one need fear any wear through a lifetime. The combination is really not bad for a big game rifle because but few shots are fired prone with such a rifle, and because, once having set it for 200 yards, you do not have to worry that it will be out of adjustment when you come to use it. A 200-yard adjustment is quite satisfactory for big game shooting, as you can hold just a trifle low for 100 yards (2.75 inches), and hold up towards the back-bone of the animal for ranges which you think exceed 200 yards. But if you touch the screws after you have once adjusted it then you have the job to do all over again and this, as I say, may require one hour or three days. I always wish in using this rifle that the telescope could have been placed half an inch lower, and that it had the good instant and positive adjustment of the Lyman No. 48 receiver sight.

ANOTHER mounting which it seems to me ought to answer fairly well is the Belding and Mull "T. H." mount with special bases as shown in Figure 4. The rear of the truss should be provided with screws for adjustment similar to the Belding and Mull rear mount "D" shown in Figure 5, which can be done. I wish the two bases securing the truss to the barrel could have been placed a little farther apart, that is, that the rear base could have been brought more to the rear, which would have given greater strength and less chance of any error occurring between the legs of the mount and the bases. Of course, in such a mounting there remains the danger, as I have pointed out above, of a blow on the eyepiece of the telescope, resulting from an accidental fall, springing everything out of alignment.

Although I have never tried it, I think that a fairly satisfactory solution might be obtained by using the U. S. Model 1917 breech action. The bolt handle on this action does not turn up so high as on others, and the tele-

scope can be given a fairly low position. The rear sight should be removed and the bridge of the receiver milled down very low. A flat steel rib should be screwed and soldered to the receiver ring and bridge of the receiver, extending over the bolt opening of the receiver, giving a flat surface on top from the front of the receiver to the rear of the bridge. The bases for any mounting desired can then be screwed anywhere that may be necessary on this rib to bring the eyepiece to the right distance from the eye, and the mounting itself can be made quite low as the bolt handle does not turn up so high that it will be liable to interfere with the telescope tube. A Belding and Mull hunting telescope with trussed mount and adjusting screws similar to the "D" mount would seem to be indicated. Of course, such a mounting will prevent clip loading, but that is not much of a disadvantage. The Remington Model .30 breech action could be used if desired instead of the U. S. Model 1917 action, both being similar.

On a single-shot rifle like the Winchester, Remington-Hepburn, or Sharps orchardt, the proper mounting of a hunting telescope sight is a relatively easy matter. The only difficulty is that if we place the telescope low down where it should be, then we have a great deal of trouble in getting our fingers under the telescope and into the breech of the chamber to extract a fired case or a loaded cartridge that may stick a little. In these single-shot rifles a lot of fired cases do stick enough to prevent the extractor throwing them clear of the rifle, and have to be pulled out by the fingers. But really the day of the single-shot hunting rifle is passed. I used to think that the single-shot was a sportsmanlike weapon to use, but after much experience in the game fields I now tend towards the opposite opinion. Considerable game is not killed or stopped by the first shot, even when hit, and if the hunter can not get in a second or third shot fairly quickly, wounded game is likely to get away to die a lingering death with great suffering.

I have also often seen it stated in print that the telescope sight was unsportsmanlike because it gave too much advantage to the hunter. Here, too, I hold the opposite opinion. I think that the telescope sight is decidedly sportsmanlike because, by reason of superior accuracy in placing the shots, the hunter can insure a larger proportion of clean kills with the first shot, and thus avoid much needless suffering. Also the telescope almost entirely eliminates the chance for shooting a female of the horned species of big game in mistake for a male, or a human being in mistake for game.

THERE is yet another detail to consider in connection with telescope sights—the reticule. Undoubtedly the best reticule for the target telescope is one consisting of thin cross-hairs. They can be distinctly seen against black and white targets and have the least error of aim of any reticule. The post reticule is not always without error in shoot-

ing at bullseye targets, because when it is held touching the bullseye at 6 o'clock, the usual manner, there is a certain blending or bending of rays so that one can not be positive as to exactly how close he is holding to the bull, or if the post is being actually held into the bull, the result being a slight variation in elevation on the target.

But with a hunting telescope the thin cross-hairs do not show up with sufficient clearness on game with its neutral or dark coloring, or against woods and dark portions of the landscape. Usually such a reticule makes it difficult to catch aim quickly in the hunting fields, and sometimes it can not be seen at all. Here the flat-topped post reticule is decidedly the best and it does not have the error of aim that it sometimes has in bullseye shooting. In sighting the telescope with such a reticule the group of shots should fall immediately above the flat top in an imaginary square the sides of which are equal to the top of the flat post as shown in Figure 7. The post then does not obscure the portion of the target that it is desired to hit. The width of the flat top of the post should subtend 3 minutes of angle, that is, it should appear 3 inches wide when aiming at 100 yards.

Decidedly the worst reticules from every standpoint are those usually seen on telescopes of German manufacture consisting of a sharp pointed reticule as shown in Figure 6. You can never be certain just where the sharp point is placed because it tends to fade out more or less, or to blend with black and dark objects, and in catching aim very quickly you have no time for the keen and prolonged vision necessary to make it out with distinctness, consequently you aim with some portion of the post down towards its thicker part. The result is that the shots string up and down in a most exasperating fashion. Even in shooting at bullseye targets my score books are full of unaccountable high shots when I have been using telescopes with such reticules. The Germans will always equip their telescopes with flat-topped reticules if ordered from abroad with such a specification.

The Winchester A-5 telescope is equipped with a very coarse cross-hair. It is not good because it obscures so much of the point one aims at. For target shooting it is very much better to have this telescope equipped with the flat-top post reticule as shown in Figure 6. The makers will so equip their telescope on special order without extra charge. The fine cross-hairs on the Fecker and Belding and Mull target telescopes are ideal for target shooting, and the best post reticule I have seen on a hunting telescope is that placed on the Belding and Mull 3-power hunting glass.

The hunting telescope sight affords greatly increased possibilities for accuracy and quickness of aim, for increased clearness of target, placing shots, and ability to define targets which can not be seen with the naked eye. If it can be properly mounted it will very greatly increase the capabilities of our best rifles. Temporarily we are at a standstill in im-

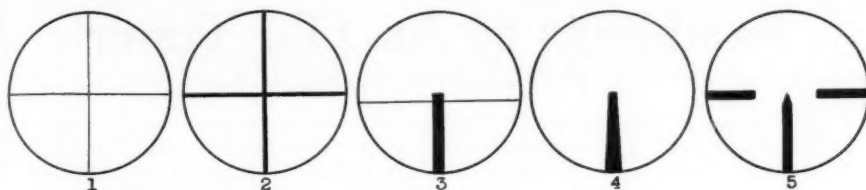


Fig. 6

1. Thin cross-hair reticle for target telescope sight.
2. Thick cross-hairs, not satisfactory.
3. Flat top post reticle, very satisfactory for hunting scope.
4. Belding & Mull flat top post reticle used on hunting scopes. Very satisfactory.
5. German pointed post reticle, not satisfactory.

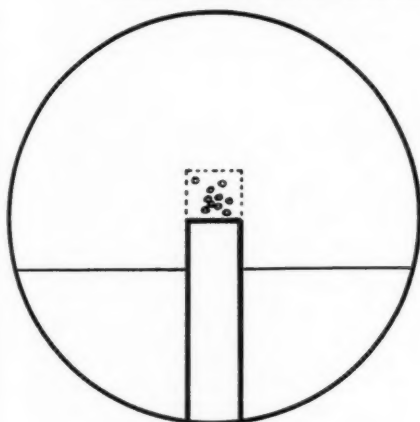


Fig. 7

Method of aiming with flat top post reticle. Group should fall in imaginary square superimposed on top of post so as not to hide point of aim. Top of post should subtend 3 minutes of angle ($3'$ at 100 yds.), and cross wire should be same distance below top of post. Modern rifles (M. V. 2,700 to 3,000 f. s.) should be sighted thus for 200 yards. Then when the cross wire is placed on center line of chest of animal, and top of post touches top of back, range will be about 300 yds. in deer and sheep, 400 yds. on elk, caribou, goat, and small bear, and 500 yds. on moose and large bear. At these ranges fine shots have fair chance of hitting by holding with top of post touching top of back of animal directly above a vital area.

provement due to the difficulties of mounting. There are at present a number of makeshifts which are really very good, but which can not be regarded as ideal. Inas-

much as we are extremely unlikely to have a rifle designed and produced specially for a telescope, I think that the solution lies in the prismatic telescope, and I think that some ingenious method can be devised for mounting such a glass. It is to be hoped that some optical engineer will take this matter up, but before he can succeed he must understand exactly what the rifleman requires, and he will find many pitfalls which he must avoid.

But even as they are today our best hunting telescopes and our best mountings are far superior to our best metallic sights for hunting provided they are used by a real rifleman who understands their care and adjustment, and who will maintain them in reliable and accurate condition and adjustment. For the ordinary sportsman they are just as unsuited and unreliable as a transit would be in the hands of a day laborer.

Our most modern rifles shoot with extreme accuracy, but only a telescope sight will permit a gilt edge barrel and ammunition to show their possibilities. Hunting with a telescope sight affords a wealth of unexpected pleasure. No naked eye can perceive the many interesting things that fine lenses will bring out. The tendency will not be to kill more game, but rather to study the game and its habits, and to develop a real sympathy with it. And when it comes to shooting hunters will be able to select the really fine head, and they will wound less game.

Stantaquism and other such bilge. It has been, for a decade past, the chief consolation of the small and forlorn minority of civilized Americans.

But the *Nation*, in its days, has been a Liberal organ, and its old follies die hard. Ever and anon, in the midst of its most eloquent and effective pleas for Liberty, its eye wanders weakly toward Law. At such moments the old lust to lift 'em up overcomes it, and it makes a brilliant and melodramatic ass of itself. Such a moment was upon it when it printed the paragraph that I have quoted. Into that paragraph—of not over 200 words—it packed as much maudlin and nonsensical blather, as much idiotic reasoning and banal moralizing, as Dr. Coolidge gets into a speech of two hours' length.

II.

The new law that it advocated, indeed, is one of the most absurd specimens of jackass legislation ever heard of, even in this paradise of legislative donkeyism. Its single and sole effect would be to exaggerate enormously all of the evils it proposes to put down. It would not take pistols out of the hands of rogues and fools; it would simply take them out of the hands of honest men. The gunman today has great advantages everywhere. He has artillery in his pocket, and he may assume that, in the large cities, at least two-thirds of his prospective victims are unarmed. But if the *Nation's* proposed law (or amendment) were passed and enforced, he could assume safely that *all* of them were unarmed.

Here I do not indulge in theory. The hard facts are publicly on display in New York State, where a law of exactly the same tenor is already on the books—the so-called Sullivan Law. In order to get it there, of course, the Second Amendment had to be severely strained, but the uplifters advocated the straining unanimously, and to the tune of loud hosannas, and the courts, as usual, were willing to sign on the dotted line. It is now a dreadful felony in New York to "have or possess" a pistol. Even if one keeps it locked in a bureau drawer at home, one may be sent to the hoosegow for ten years. More, men who have done no more are frequently bumped off. The cops, suspecting a man, say, of political heresy, raid his house and look for copies of the *Nation*. They find none, and are thus baffled—but at the bottom of a trunk they do find a rusted and battered revolver. So he goes on trial for violating the Sullivan Law, and is presently being psycho-analyzed by the uplifters at Sing Sing.

With what result? With the general result that New York, even more than Chicago, is the heaven of footpads, hijackers, gunmen and all other such armed thugs. Their hands upon their pistols, they know that they are safe. Not one citizen out of a hundred that they tackle is armed—for getting a license to keep a revolver is a difficult business, and carrying one without it is more dangerous than submitting to robbery. So the gunmen flourish and give humble thanks to God. Like the bootleggers, they are hot and unanimous for Law Enforcement.

The Uplifters Try It Again

By H. L. Mencken

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I.

THE eminent *Nation* announces with relish "the organization of a national committee of 100 to induce Congress to prohibit the inter-State traffic in revolvers," and offers the pious judgment that it is "a step forward." "Crime statistics," it appears, "show that 90% of the murders that take place are committed by the use of the pistol, and every year there are hundreds of cases of accidental homicide because somebody did not know that his revolver was loaded." The new law—or is it to be a constitutional amendment?—will do away with all that. "It will not be easy," of course, "to draw a law that will permit exceptions for public officers and bank guards"—to say nothing of Prohibi-

tion agents and other such legalized murderers. "But soon even these officials may get on without revolvers."

More than once, in this place, I have lavished high praise upon the *Nation*. All that praise has been deserved, and I am by no means disposed to go back on it. The *Nation* is one of the few honest and intelligent periodicals published in the United States. It stands clear of official buncombe; it prints every week a great mass of news that the newspapers seem to miss; it interprets that news with a freedom and a sagacity that few newspaper editors can even so much as imagine. If it shut up shop then the country would plunge almost unchallenged into the lowest depths of Coolidgism, Rotarianism,

III.

To all this, of course, the uplifters have a ready answer. (At having ready answers, indeed, they always shine!) The New York thugs, they say, are armed to the teeth because New Jersey and Connecticut lack Sullivan Laws. When one of them wants a revolver all he has to do is to cross the river or take a short trolley trip. Or, to quote the *Nation*, he may "simply remit to one of the large firms which advertise the sale of their weapons by mail." The remedy is the usual dose: More law. Congress is besought to "prohibit the inter-State traffic in revolvers, especially to bar them from the mails."

It is all very familiar, and very depressing. Find me a man so vast an imbecile that he seriously believes that this prohibition would work. What would become of the millions of revolvers already in the hands of the American people—if not in New York, then at least everywhere else? (I own two and my brother owns at least a dozen, though neither of us has fired one since the close of the Liberty Loan drives.) Would the cops at once confiscate this immense stock, or would it tend to concentrate in the hands of the criminal classes? If they attempted confiscation, how would they get my two revolvers—lawfully acquired and possessed—without breaking into my house? Would I wait for them docilely—or would I sell out, in anticipation, to the nearest pistol bootlegger?

The first effect of the enactment of such a law, obviously, would be to make the market price of all small arms rise sharply. A pistol which is now worth, second-hand, perhaps \$2, would quickly reach a value of \$10 or even \$20. This is not theorizing; we have had plenty of experience with gin. Well, imagining such prices to prevail, would the generality of men surrender their weapons to the *Polizei*, or would they sell them to the bootleggers? And if they sold them to the bootleggers, what would become of them in the end: would they fall into the hands of honest men or into the hands of rogues?

IV.

But the gunmen, I take it, would not suffer from the high cost of artillery for long. The moment the price got really attractive, the cops themselves would begin to sell their pistols, and with them the whole corps of Prohibition blacklegs, private detectives, deputy sheriffs, and other such scoundrels. And smuggling, as in the case of alcoholic beverages, would become an organized industry, large in scale and lordly in profits. Imagine the supplies that would pour over the long Canadian and Mexican borders! And into every port on every incoming ship!

Certainly, the history of the attempt to enforce Prohibition should give even uplifters pause. A case of whisky is a bulky object. It must be transported on a truck. It can not be disguised. Yet in every American city today a case of whisky may be bought almost as readily as a pair of shoes—despite all the armed guards along the Canadian border, and all the guard ships off the ports, and all the raiding, snooping and murdering everywhere

Ramblings of An Old Timer

By Charles T. Payne

THE bug bit me when I was nine years old. The cause of my malady—a Kentucky Rifle, one my dad brought across the plains with him when he came to California in 1852. What a beauty she was! I have a mental film photographed on my brain of that wonderful gun that will never fade. My, but couldn't our dads and granddaddies shoot those old guns at 40 yards. You would have to beat a quarter inch to win money. They shot 40 yards offhand or 60 at a rest, and say, the funny part was when the breechloader came to take its place over them they just would not look at one. Can you blame them? For Miss Kentucky was the last word in guns with them. My first breech loader was the L. C. Sharps .45-70 octagon barrel, set triggers, the most wonderful gun for me that ever kicked an empty case out of her breech. No harder hitting or more accurate Black Powder rifle ever was made than Miss Sharps. Nothing would stop the bullet and I have killed two deer at one shot on several occasions, the ball passing through both carcasses. I also have killed three antelope with this same gun at one shot and I really believe that the antelope is the hardest animal to kill that ever roamed the plains.

We used to go out and get our winter's supply of meat about the first week in November and the old Sharps sure was a game getter; no wounded to run off and die. I have killed twelve deer out of the bunch. All dropped in their tracks. The best shooting I believe I did with this gun was six big blacktail bucks at five shots. Two fell the first shot, the ball passing through the first one's neck and striking number two in the shoulder. Number two was just a shade above number one on the hillside. No doubt the sportsman of today will say, "Wasn't he an awful hog?" "Yes,

sir, one with bristles all over him." But you must remember that was a long time ago and I was in a game country, the likes of which will never be seen again. Elk, sheep, deer, both black and white tail, were so plentiful you could take your pick and that's just what we did. Elk, we would pick a barren cow for meat. You could tell them for they were darker color than the rest. I never fired more than one shot at an elk. Maybe I was lucky, but the old gun would drive a 500 grain ball plum through the carcass. I used the Western make of ammunition. I also used the Government make, as issued at that time. They were copper cases, not reloadable; looked like rim fire cartridges. Really I am ashamed to tell how many elk I killed. I am not exaggerating the least when I say I have seen at least 25,000 elk in one drove or band and antelope would band up in large droves, say ten thousand. The elk was a plains animal until civilization drove it to the mountains. The last big band of antelope I saw was during the hard winter of 1886-7 on the Mussellsell River between Fort McGinnis and Junction City, Montana.

About four thousand hide hunters had lots to their credit or one should say discredit for destroying this most beautiful and picturesque animal. They killed them by the thousands usually in the wintertime just for the hides, taking the advantage of them when they came in from the plains to band up on the river bottoms. As they received \$1.25 per skin they made lots of money. Most of these hunters used the Sharps .45-70 500 grain bullet.

Most every hunter has made lucky shots, so will tell of one. I was going down to Stillwater from the Old Crow Agency on the Rose Bud Creek with a span of horses and wagon
(Continued on Page 18)

else. Thus the camel gets in—and yet the proponents of the new anti-pistol law tell us that they will catch the gnat! Go whisper it to the Marines!

Such a law, indeed, would simply make gun-toting swagger and fashionable, as Prohibition has made guzzling swagger and fashionable. When I was a youngster there were no Prohibition agents; hence I never so much as drank a glass of beer until I was nearly 19. Today, Law Enforcement is the eighth sacrament—and the Methodist Board of Temperance, Prohibition and Public Morals is itself authority for the sad news that the young of the land are full of gin. I remember, in my youth, a time when the cops tried to prohibit the game of catty. At once every boy in Baltimore consecrated his whole time and energy to it. Finally, the cops gave up their crusade. Almost instantly catty disappeared.

V.

The real victim of moral legislation is always the honest, law-abiding, well-meaning citizen—what the late William Graham Sumner called the Forgotten Man. Prohibition

makes it impossible for him to take a harmless drink, cheaply and in a decent manner. In the same way the Harrison Act puts heavy burdens upon the physician who has need of prescribing narcotic drugs for a patient, honestly and for good ends. But the drunkard still gets all the alcohol that he can hold, and the drug addict is still full of morphine and cocaine. By precisely the same route the *Nation's* new law would deprive the reputable citizen of the arms he needs for protection, and hand them over to the rogues that he needs protection against.

Ten or fifteen years ago there was an epidemic of suicide by bichloride of mercury tablets. At once the uplifters proposed laws forbidding their sale, and such laws are now in force in many States, including New York. The consequences are classical. A New Yorker, desiring to lay in an antiseptic for household use, is deprived of the cheapest, most convenient and most effective. And the suicide rate in New York, as elsewhere, is still steadily rising.

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Impressions of the Columbus Shoot

By Frank J. Kahrs

THIS story has a moral to it and I might just as well tell you now that the moral is Dr. M. E. McManes of Piqua, Ohio, and while I do not believe the Doctor will agree with me, still I insist, with all due respect to the others associated with him in putting on the Columbus Shoot, that without his energetic and tireless efforts there would have been no shoot or at least it would not have measured up to the success which it did.

I first met Mr. McManes at Sea Girt, July last, and every one there was impressed with his keen interest and enthusiasm for small-bore rifle shooting. I think I am correct in stating that it was the first time the Doctor had done any shooting at 200 yards with the small-bore rifle and what he did at that shoot is still vivid in the minds of those who were there. So much for the Doctor, although I can not pass him by until I have stated that we need more of his kind and that the shooting game is better off for his having taken a part.

The Columbus Shoot was held under the auspices of the Ohio Rifle League, which is an organization composed of rifle clubs affiliated with the N. R. A. throughout Ohio. The *Columbus Despatch*, one of those daily newspapers with a clean-cut definite policy concerning sporting events, cooperated to make the affair possible. This isn't the first time either, for we have personally seen pages of shooting pictures and much reading matter about scores printed in that publication during the past few years.

After deciding that such a shoot should be held, it was found that there was no range in Ohio capable of handling it conveniently. Finally Dr. McManes interviewed Major Kampfer, the Commanding Officer of Fort Hayes, and told him his story. Fortunately for Dr. McManes, Major Kampfer had done a tour of duty at Camp Perry and knew something about the shooting game. He caught the spirit immediately and told the Doctor they would cooperate to the limit. It didn't take the Doctor long to discover the drill hall, a building about 200 feet long and 100 feet wide, steam heated and with a high roof which insured plenty of ventilation. A detail of soldiers was soon on the job, back stops were built of material donated by the Post and sheet steel by the Pennsylvania Railroad. Electric light connections were made, and when your scribe arrived at Columbus the morning of February 20th he found one of the largest and finest indoor ranges in the country.

There were 30 targets—12 at 75 feet and 18 at 50 feet. The lights were reflected from the floor and were very uniform. The Commander of the Fifth Corps Area is Maj. Gen. R. C. Howse, who enthusiastically consented to come over to the range and fire the first shot, which he did Saturday morning at 9:30

o'clock. From that moment on and for three consecutive days that otherwise quiet and somber drill hall was a bedlam of noise. There were 140 riflemen from all sections of Ohio and nearby states.

Fred Johanson, who is a familiar figure at Camp Perry, came all the way from his home town of Joliet. Ernie Miller left Hillsboro at 3 o'clock in the morning and drove six hours to be there by nine in the morning. Hart, last year's Dewar team member, from Cleveland, came over, shot in most of the matches, was high man on the Iowa-Ohio Match and well up in most of the matches, besides attending to his business of showing hand-made fancy guns and special equipment for riflemen. Incidentally Hart supplies a mighty fine no-slip gun sling.

The Hercules Powder Company with characteristic broadmindedness sent Henry Marsh from Wilmington, Delaware, to help the local boys with the statistical end of it. Of course, any one who has seen Henry function at Sea Girt in July knows that as a statistical officer he ranks them all. Major Simmons was sent over by the DuPont Company and Mr. H. E. Anderson of the Peters Cartridge Company was also there. The Remington Company sent ye scribe.

In our individual capacity of shooting enthusiasts we have seen many indoor and outdoor rifle shots and many fine indoor ranges, but have never seen so much shooting interest and enthusiasm and such a fine range and place to shoot as we witnessed in Columbus.

Youth and Age were represented. Youth, by Master Smith, son of Capt. R. P. Smith of the 10th U. S. Infantry, 13 years of age, but a real shooter in confidence and enthusiasm. The boy handled the .22 like a veteran and gave a good account of himself. He is a chip of the old block and a son of whom to be proud.

Age was represented by W. Russell O'Neil, secretary of the Steubenville Rifle Club, 68 years young, and his birthday fell on the third day of the shoot, Washington's birthday. Perhaps we ought not to refer to age because Mr. O'Neil is still secretary of the Steubenville Rifle Club, comes to Camp Perry and attends all of the shoots. He is age in the sense of years only, but not in determination and shooting interests.

The ladies were also represented. We were busy in the statistical work, but think we saw Mrs. Jess Moser of Dayton, Mrs. Hoefer, Mrs. Jacobs, Miss Smith and Miss Brown.

A rather interesting feature of this shoot was the prize list. In most matches every other shooter received a substantial prize of cash or merchandise. In one match every third shooter received a prize.

There was also an International Match between Ontario and Ohio—20 men to a team—

and another match between Iowa and Ohio, also 20 men to the team. The match with Iowa was at 50 feet in all four positions, 20 shots each position, and it made a humdinger of a match. The contest with Ontario called for 40 shots at 75 feet prone. All of this shooting was done on the home ranges of the respective teams and the results exchanged by mail. It is understood that the Ontario team will endeavor to shoot the match shoulder to shoulder next year.

It takes courage and determination to conceive and put on a shoot of the size of the one at Columbus and there are a thousand and one details to be looked after. It takes a large force for the statistical work and the operation of the range, especially when there are 140 competitors. There was a stock of targets over three feet high which had to be scored. This means a lot of work because it is mostly a one-man job in order to preserve uniformity of scoring.

Indoor targets do not score so easily. Many of the bullet holes are coincident with each other and the plug must be constantly employed to determine whether the bullet hole cuts the line. The magnifying glass is a great aid in scoring—all of which takes time. Yet these details were looked after in good shape and there was very little delay so far as the scoring was concerned.

Taking it by and large, the Columbus shoot was a decided success from point of size, of range, number of targets, number of competitors and the amount of shooting done. It was decidedly the largest indoor shoot ever held in the United States. Without the cooperation of General Howse, Major Kempfer, the officers and the enlisted men at Fort Hayes the shoot would not have been possible. My own impression is that the Columbus boys did a fine job and are entitled to great credit for giving the Ohio small-bore shooters a real indoor shoot.

We shall ask Dr. McManes to help us run the Sea Girt Shoot. He is the only man we have ever known who is able to be in two or more places at one time and we need him. He is the kind of a man we have been looking for and we hope to land him at Sea Girt for the 4th of July.

An Ad in the Dope Bag
will bring you greater
returns than any other
medium.

The Rifle of the Past

By Natty Bumpo

THE first thing in renewing an old muzzleloading rifle is to take it apart. Put the small parts all into a box, and place that where you can be sure of finding it. The stock should be safely placed, as it is a rather breakable thing after the barrel is removed. Hang it up, overhead, if possible. So it will not be knocked down, too.

Unscrew the breechplug out of the barrel, holding the breechend in your vise and using a wrench on the plug. Right here I might add that a pair of copper or brass vise jaws are valuable, but heavy pieces of cardboard, or even pieces of hardwood will answer, although not so convenient.

One thing you will probably have to get is a round rod of a length sufficient to pass entirely through your barrel. I use a rod of one quarter inch diameter, the kind called "cold rolled steel" is easiest to obtain. But any kind will do, that can be threaded, as it should have threads on one end to screw into your cutter holder. A cross handle at the other end is mighty useful, which can be made from the handle of an abandoned automobile pump. If it revolves freely on the rod it will be better.

As to the cutter holder, it should be made of hardwood and the best kind is hickory. That may be difficult for many people to secure, so I will say that many packing boxes, nowadays, are made out of pecan wood, which is a near cousin of hickory. You can shape one up out of a piece of such lumber. Or the material called "dowel rods" is fairly easy to secure, from anyone who repairs furniture. They are of suitable wood and come in convenient diameters. If a shade too big, it is easy to trim one down a little, to size about a thirty-second of an inch smaller than will slip into your barrel. Four feet of dowel rod should answer for making tools for a barrel. I use four sticks, about a foot long.

Each one should have a steel ferrule on one end, screwed on and a couple of pins driven through the ferrule and the wood, cut off and riveted, then filed smooth. They are shown by the sketch. Wire nails of about a sixteenth inch thickness make good pins. If those on hand are too thick it is easy to file them down a little.

One stick is to hold abrasive cloth for roughly cleaning the bore with, in case it is rough.

Another serves for holding and guiding the cutter while it recuts the grooves, while the third answers the same purpose for the lands. You should have a cleaning rod that will enable you to wipe out the bore, occasionally, and see how your work is progressing.

The first stick needed is used to scour off the surface of the lands, so that your guiding leads can ride along them without being worn away by roughness of the metal.

Cut a piece of emery, or carborundum, cloth about three inches long and just wide

enough to wrap around your stick, without lapping. Glue it on the end of the stick, winding it tightly with twine until dry. Then, you should place it in the vise and split it lengthwise, with a hacksaw blade, following the joint in the cloth.

The stick should be just big enough to allow slipping the clothed end into the bore, and it can be wedged open with cardboard, or a thin wedge, until it fits tightly enough.

All we wish to do is to remove the roughness. Taking the pits out is a job for our cutter.

As to making the cutter stick, consult the sketch showing it before the leads are poured on. You can use one stick for both grooves and lands by cutting the old leads off and then pouring new ones that situate the land cutter in the right place.

To pour the leads, have your lead melting in a ladle that you can handle conveniently. Wrap the stick with twine until it pushes into the bore snugly, and having the part of the stick on which lead is to be poured inside of the bore.

Heat your muzzle, about the same as you would a bullet mold, and for the same reason, and then pour your lead. The groove in the side of the stick allows entrance into the bore, of the lead.

Trim the surplus lead off neatly, then take a very thin scrape off all the surface of the lead, except the sides of the ridges. It should push into the bore, then, without great force. Hitch your steel rod into it and pull it clear through the barrel. Try it in every groove, as it must pass from one groove to another and it is easiest to do it now.

When it works smoothly, push that end down into the bore until the other end is in the position to receive lead and pour that end. Dress the second lead down, as you did with the first, until both leads will enter any groove and slide nicely through the whole bore.

That done, lay a straight edge, or the back of a straight hacksaw blade, up against the edge of opposite ridges and draw a line across the wood lying between, with a knife point or other sharp tool. Do the same with the other side of the same ridge and you have thus located a place for the cutter that is to recut the grooves.

A small chisel, or penknife blade, will cut the slot. Make it small to begin with, and finish with a small flat file. It should go through the middle of the wood, as nearly as possible. And it is advisable to have the slot slightly broader than the ridge on the leads, so that a cutter snugly fitting it is wide enough to allow filing down a little, along its cutting edges, in case it does not line up exactly right with the ridge indicating the groove it is to cut.

If the edges do need lining up, hold the cutter in the vise with about a sixteenth stick-

ing up and run a file along the top of the vise to cut away whatever is out of line.

Material for the cutter is had by sticking an old file in the fire until it is heated red hot all over. Let it cool as slowly as you can and it will be soft enough to saw into pieces, or file easily.

When your cutter is properly shaped up, dress down the face that is to do the cutting. Look along the top of the ridges in line with it when in the slot to shape the face right, and leave that a shade below the ridge surfaces, about the thickness of a piece of tin.

Seven or eight cutting teeth to a five-eighths cutter seem to do good work. Be sure that all are sharp, as one dull one holds all of the rest off the metal that should be cut away from the bore.

Harden the cutter by heating to a bright red and dropping into clean water. You will find that a foot or so of wire, with a loop bent into one end with which to hold the cutter, is handy for holding it in the fire.

When hardened, scour the flat sides of the cutter on emery cloth until again bright. Have your softened file heated pretty well, not necessarily to a red, and lay the cutter on a moderately hot part of the old file and closely watch the change of color in the cutter. As soon as it reaches a brassy color, dump it into water, and it is then tempered for use. Better touch the cutting teeth up with a small oilstone. If you have a magnifying glass of any kind, use it to be sure they are all sharp.

Directly opposite the cutter, on the other side of the stick, should be situated a slip of steel to "back up" the cutter. If not there, when either lead has left the bore, your stick will spring enough to release the pressure on the cutter, and a bore small at the breech and muzzle, would soon result.

The piece should nicely touch the two lands opposite the groove you are cutting. Lay a straight edge across, from lead to lead, while you are shaping it up, to see that it does so. We made the slot clear through the wood on purpose to provide a place to hold it. Part of the slip should fit, snugly, into that side of the slot: you are going to cuss if it is necessary to search the floor every few minutes for it. Fit it so it will not drop out. I might add that the cutter has the same annoying characteristic, if too loose in the slot.

An important item lies in the continual use of what is called "cutting oil" to keep the bore wet when you are working on it. Such oil can be had from almost any oil company. The plumber is apt to have some, or any machine shop. A pint will be twice as much as you will need for a barrel.

Use three parts of water to one of oil, dump in a tablespoonful or two of common

(Continued on Page 18)

A Short Cut To Exterior Ballistics

By Edgar Bugless and Wallace H. Cox

Ballistic Engineers of the E. I. Du Pont de Nemours & Company

Part IX. The Determination of Bullet Energy

THE energy of a bullet is a measure of the ability of the bullet to do work. There are two kinds of energy, potential and kinetic. Potential energy is the energy of place or position, while kinetic energy is the energy of motion.

Potential energy is stored-up energy. It is not doing any work, but is dormant, ready to do work as soon as it is released. There is an immense amount of energy stored in the water of a reservoir. It is held in check by the dam, but there is no motion and no evidence of the energy stored there. Should the dam break, however, this stored-up energy is released and becomes kinetic energy due to its motion.

In a similar manner, there is energy stored in a loaded cartridge which is also potential energy. It is dormant because there is insufficient heat in the atmosphere to release it. As soon as the primer is fired, however, and the heat applied to the powder, the energy is released and the powder gases expand, doing work against the base of the bullet. Thus the bullet acquires kinetic energy.

The shooter is chiefly concerned with kinetic energy, as measured as the bullet leaves the muzzle or at some distance from the muzzle at a point along the trajectory of the bullet. As stated above, the energy of a bullet is a measure of the ability of the bul-

let to do work and this energy is commonly defined in foot pounds, signifying that the bullet possesses sufficient force to move a weight of one pound a distance of a certain number of feet or a weight of a certain number of pounds a distance of one foot or any weight through any distance provided the product of the weight in pounds times the distance in feet equals the value of the energy in foot pounds.

The chart for the determination of bullet energy is presented in Drawing No. 9. The energy of a bullet in flight, whether at the muzzle or at any point along the trajectory, depends only upon the weight of the bullet and its velocity at that instant. The value of this striking energy or muzzle energy, as the case may be, is determined by the formula:

$$\text{Energy in foot pounds} = \frac{\text{Mass of Bullet} \times (\text{Velocity})^2}{2}$$

$$\text{But Mass} = \frac{\text{Weight or Weight}}{g} \quad \frac{32.2}{32.2}$$

Then our formula becomes:

$$\begin{aligned} \text{Energy in foot pounds} &= \frac{\text{Bullet Wgt. in Grs.} \times (\text{Veloc. in F.S.})^2}{7,000 \times 2 \times 32.2} \\ \text{or } E &= \frac{WV^2}{14,000g} = \frac{WV^2}{450,800} \end{aligned}$$

The values and limits used in constructing Drawing No. 9 are shown in detail in Table No. 9A. This is a very simple nomograph and in actual construction is laid out in the same manner as Drawing No. 2, which has previously been explained.

The energy of a bullet at any point along its trajectory can not be used alone as a true measure of the killing power of the bullet. Killing power is dependent to a certain extent upon the shocking force a bullet exerts, and shocking force is dependent upon velocity as well as energy. Take, for example, the 220-grain Springfield bullet, starting at a muzzle velocity of 2,400 feet per second with 2,810 foot pounds muzzle energy and the 110-grain Springfield bullet starting at a muzzle velocity of 3,500 feet per second with 3,000 foot pounds muzzle energy. At a point 100 yards distant from the muzzle of the rifle the 220-grain bullet will be moving at the rate of 2,160 feet per second, while the 110-grain bullet will be moving at the rate of 3,060 feet per second and both bullets will develop the same energy at 2,285 foot pounds, yet the 110-grain bullet will probably have greater killing power since it strikes with a velocity 900 feet faster than the 220-grain bullet. At a range of 1,000 yards the killing power of the two bullets will be reversed. The 110-grain bullet will be moving

Table 9B

Caliber	Bullet	Muzzle Velocity in Foot Seconds	Ogive from Drawing #1	Measured Diameter of Flat Nose in Calibers	Coefficient of Form from Drawing #1	Measured Diameter of Bullet in Inches	Ballistic Coefficient		Value of Z for Range of 300 Feet	Remaining Velocity at 300 Feet		Angle of Departure in Minutes for Range of 300 Feet		Time of Flight in Seconds over Range of 300 Feet		Maximum Height of Trajectory in Inches for Range of 300 Feet		Angle of Fall in Minutes for Range of 300 Feet		Angular Wind Deflection in Minutes or Seconds for 10 Miles per Hour Cross Wind over Range of 300 Feet		Muzzle Energy in Foot Pounds		Striking Energy in Foot Pounds at 300 Feet			
							Calculated	Read from Drawing #2		Calculated	Read from Drawing #3	Calculated	Read from Drawing #3	Calculated	Read from Drawing #4	Calculated	Read from Drawing #5	Calculated	Read from Drawing #6	Calculated	Read from Drawing #7	Calculated	Read from Drawing #8	Calculated	Read from Drawing #9	Calculated	Read from Drawing #9
22 Long Rifle	R. A. 40 gr. Lead	1070	2	0.85	0.222	137	137	2190	2200	932	936	16.0	17.0	0.30	0.34	4.44	4.60	17.6	18.6	1.29'	3.3'	102	102	77	80		
25/20 W. C. F.	R. A. 60 gr. Hi-Speed	2200	4	0.10	0.85	0.258	152	152	1075	1075	1706	1706	4.1	4.2	0.16	0.17	1.17	1.20	4.9	5.0	3.18'	3.0'	646	656	388	390	
25/20 W. C. F.	Peters 60 gr. Hi-Speed	2200	4	0.08	0.75	0.258	172	172	1745	1750	1750	1750	4.0	4.0	0.15	0.17	1.13	1.10	4.6	4.8	2.70'	2.9'	646	656	412	415	
25/35 W. C. F.	Peters 117 gr. Hi-Speed	1972	4	0.15	1.10	0.258	228	228	1315	1300	1664	1650	4.8	4.7	0.17	0.18	1.32	1.40	5.3	5.32	3.32'	2.9'	1002	1000	720	710	
250/3000 Savage	Western 87 gr. H.P. Expanding	3000	6	0.08	0.70	0.258	267	267	1125	1120	2635	2630	2.0	2.0	0.11	0.11	0.54	0.52	2.2	2.3	1.16'	1.2'	1740	1750	1345	1250	
250/3000 Savage	Western 100 gr. Lubaloy S.P.	2850	4	0.06	0.60	0.257	361	360	830	830	2585	2580	2.2	2.2	0.11	0.12	0.56	0.60	2.3	2.4	52'	55'	1806	1822	1480	1500	
270 Winchester	W. R. A. 130 gr. Ex. Pt.	2700	8	0.09	0.49	0.277	495	496	606	604	2514	2500	2.3	2.4	0.12	0.12	0.64	0.65	2.5	2.7	46'	41'	2100	2100	1825	1820	
30 Newton	Western 180 gr. Lubaloy Ex. Pt.	2500	8	0.07	0.70	0.308	387	387	777	780	2290	2280	2.9	2.9	0.13	0.14	0.77	0.80	3.0	3.1	58'	1.0'	2500	2525	2100	2100	
30/06 Spld.	R. A. 110 gr. Hi-Speed	3500	6	0.10	0.70	0.308	237	237	1265	1260	3059	3050	1.5	1.6	0.092	0.095	0.40	0.45	1.7	1.8	0.00'	1.0'	3000	3006	2285	2275	
30/06 Spld.	Western 150 gr. Lub. Ex. Pt.	2700	6	0.10	0.70	0.308	322	322	930	925	2416	2410	2.5	2.5	0.12	0.12	0.69	0.70	2.7	2.8	1.05'	1.8'	2435	2450	1940	1950	
30/06 Spld.	R. A. 180 gr. Hi-Speed	2700	8	0.09	0.49	0.308	554	556	542	541	2532	2520	2.3	2.4	0.12	0.12	0.63	0.67	2.5	2.7	35'	36'	2917	2950	2553	2550	
30/06 Spld.	Western 180 gr. Ex. Pt.	2700	6	0.10	0.70	0.30	387	387	775	780	2460	2460	2.4	2.5	0.12	0.12	0.66	0.68	2.6	2.8	52'	55'	2917	2950	2434	2450	
30/30 W. C. F.	Peters 170 gr. M. C. S. P.	2000	1.5	1.00	0.305	261	261	1150	1150	1722	1710	4.6	4.4	0.16	0.17	1.27	1.30	5.1	5.0	1.97'	2.0'	1510	1550	1120	1125		
30/40 Krag	W. R. A. 220 gr. M. C.	2000	1.5	0.95	0.308	358	348	868	865	1787	1780	4.6	4.5	0.16	0.18	1.24	1.27	4.9	4.9	1.46'	1.6'	1955	1950	1560	1575		
32 Colt Auto	R. A. 71 gr. M. C.	825	1	1.10	1.312	0.985	0.985	3160	3150	711	710	27.0	27.5	0.39	0.45	7.42	7.86	29.8	30.0	4.85'	5.0'	107	110	80	75		
32 W. C. F.	W. R. A. 90 gr. Super-Speed	2000	4	0.75	0.311	188	188	1900	1890	1590	1580	5.0	5.1	0.17	0.18	1.31	1.36	5.8	6.1	3.41'	3.5'	711	710	483	480		
32 Win. Spl.	R. A. 110 gr. Hi-Speed	2550	6	0.10	0.70	0.321	218	218	1375	1370	2167	2160	2.9	2.9	0.13	0.13	0.79	0.85	3.2	3.3	1.68'	1.8'	1800	1800	1335	1350	
32/40 W. C. F.	W. R. A. 165 gr. M. C. S. P.	1500	3	0.17	1.10	0.320	206	206	1432	1425	1248	1240	8.4	8.4	0.22	0.24	2.35	2.50	9.5	9.7	2.27'	3.2'	825	830	572	570	
35 Remington	Western 200 gr. Lub. Ex. Pt.	2000	4	0.16	0.72	0.359	296	296	1015	1010	1750	1750	4.5	4.6	0.16	0.18	1.23	1.25	4.9	5.1	1.74'	1.8'	1775	1800	1367	1400	
38/55 W. C. F.	Peters 255 gr. M. C.	1700	2	0.20	1.25	0.376	200	200	1455	1450	1400	1390	6.5	6.3	0.19	0.22	1.83	1.90	7.4	7.5	3.06'	3.0'	1635	1650	1116	1110	
40/65 W. C. F.	R. A. 260 gr. Lead	1420	2	0.22	1.25	0.405	181	180	1658	1650	1163	1160	9.5	9.2	0.24	0.24	2.68	2.70	10.9	11.0	3.95'	3.7'	1165	1175	783	790	
40/70 W. C. F.	R. A. 330 gr. Lead	1380	3	0.22	1.15	0.405	250	248	1200	1200	1192	1190	9.7	9.7	0.24	0.25	2.66	2.70	10.6	10.8	3.92'	3.7'	1395	1400	1042	1040	
40/90 Sharps	R. A. 370 gr. Paper Patch	1400	1.5	0.18	1.25	0.405	258	257	1160	1160	1212	1205	9.3	9.1	0.23	0.24	2.58	2.60	10.3	10.5	3.78'	3.2'	1610	1625	1210	1200	
45/70 W. C. F.	R. A. 405 gr. Lead	1380	1.5	0.20	1.25	0.450	220	219	1365	1360	1158	1150	10.0	10.0	0.24	0.27	2.76	2.90	11.1	11.3	3.37'	3.0'	1665	1700	1207	1210	
45/70 W. C. F.	W. R. A. 300 gr. M. C. S. P.	1890	1.5	0.25	1.35	0.456	153	153	1960	1950	1461	1460	5.6	5.8	0.18	0.20	1.59	1.80	6.6	6.8	3.70'	4.1'	2382	2400	1425	1450	
45/90 W. C. F.	W. R. A. 300 gr. Lead	1550	2	0.25	1.25	0.458	163	162	1840	1840	1225	1220	8.2	8.5	0.22	0.24	2.33	2.50	9.6	10.0	4.35'	4.2'	1602	1600	1000	1000	

at 910 foot seconds velocity and developing 200 foot pounds energy, whereas the 220-grain bullet will be moving at 950 foot seconds velocity and developing 440 foot pounds energy, thus affording greater killing power than the 110-grain bullet. The following table shows the rate of loss of velocity and energy for the 110-grain and 220-grain Springfield bullets over various ranges from the muzzle to 1,000 yards.

Bullet	At Muzzle		At 100 Yds.		At 500 Yds.		At 1,000 Yds.	
	Velocity	Energy	Velocity	Energy	Velocity	Energy	Velocity	Energy
110 gr. .30/06	3,500	3,000	3,060	2,285	1,900	880	910	200
220 gr. .30/06	2,400	2,810	2,160	2,285	1,380	930	950	440

Bullet energy is independent of any of the elements of trajectory except the weight of the bullet and the remaining velocity (or muzzle velocity, as the case may be) at a particular point.

Table No. 9B is a continuation of Table No. 8B given in the previous chapter and illustrates how both the muzzle energy and striking energy for the various bullets under consideration have been worked out. This table completes the series and should serve as a guide in the working out of trajectory tables for any bullet in which the rifleman may be interested. In the previous tables the values of the various elements were taken directly from the curves. In Table No. 9B not only are the curve readings shown, but in addition the actual calculations have been worked out for each bullet and for every element of the trajectory under consideration. It will be noted that the curve readings and the calculations are in very close agreement, the variations between the two being merely those that are due to the reduction in the curve size and to the errors introduced merely by the thickness of a pencil line. Such variations need cause no alarm as they are well

within the limit introduced by errors in holding or the individual characteristics of the rifle or the components which may be used.

It is always advisable for the rifleman to study the actual performance of his ammunition and the rifle on the range in addition to whatever calculations he may care to undertake. Every rifle eventually loses in velocity as it gets older and this loss in velocity alone will upset the most careful and painstaking calculation. A change in bullets will also be reflected in the performance of the ammunition which is caused by slight variations in diameter, in weight, or in profile.

CORRECTION OF ERRORS IN PREVIOUS ARTICLES REGARDING BALLISTICS OF .270 WINCHESTER CARTRIDGES

In all B tables, up to and including 8B, the muzzle velocity of the .270 Winchester cartridge, loaded with a 130-grain expanding point bullet, is given as 2,700 F.S. instead of the correct value, 3,160 F.S. Consequently the dependent data in the tables is correspondingly erroneous, as well as the example, page 17, January 15th issue, illustrating the use of the tables with this cartridge.

The data given in January 15th number should be corrected to read as follows

Cartridge	.270 Winchester
Bullet	130-gr. expanding bullet
Muzzle velocity	3,160 F.S.
Range	300 Ft.
Max. height of trajectory	0.4,590 inches
Ht. of trajectory mid-range	0.4,588 inches
Range	1,500 Ft.
Max. height of trajectory	15.535 inches
Ht. of traj. at mid-range	15.504 inches

Table No. 9B gives the correct values for the .270 Winchester cartridge at the correct muzzle velocity of 3,160 F.S., and being a summary table, tables published previously should be disregarded.

Table No. 9A

TABLE OF VALUES USED IN CONSTRUCTING ALIGNMENT CHART FOR THE ENERGY OF THE PROJECTILE, THROUGH A SOLUTION OF THE FORMULA $ENERGY = \frac{1}{2} MV^2$

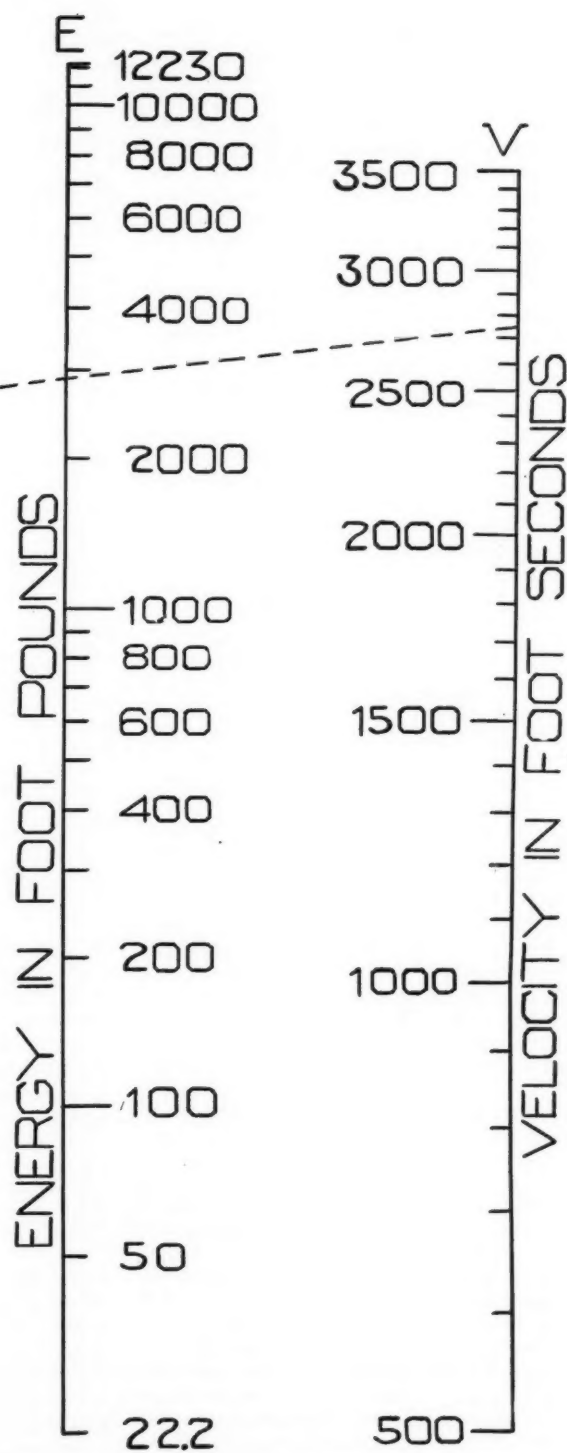
Where M = Mass of the Bullet = Weight of the Bullet in Grains \div 7000 \div 32.2
V = Velocity of Bullet in Foot Seconds

Name of Axis	Symbol	Number Limits	Log. Limits	Log. Difference	L	Actual Length	Scale Number	Equivalent Scale	Scale to Use
Bullet Weight	W	40-450	1.60206-2.65321	1.05115	10	10.51	1	'	10
Velocity	V	(500) ² -(3500) ²	5.39794-7.08814	1.69020	5	8.45	2	1	10
Energy	E	22.2-12230	1.34635-4.08743	2.74108	3½	9.12	3	3	30

Distance from W axis to V axis = 9 inches
E = ¾ × 9 inches from V = 3" from V axis

(THE END)





**CHART FOR DETERMINING ENERGY
OF PROJECTILE**

Given—Weight of bullet (W).
Velocity of bullet (V).

EXAMPLE

Find the muzzle energy of the 172-grain
Frankford Arsenal 1925 National Match bul-
let when fired from a .30/06 Springfield with
a muzzle velocity of 2,750 foot-seconds.

Weight of bullet (W) = 172 grains.

Velocity of bullet (V) = 2,750 foot-seconds.

FIRST STEP

Locate value 172 on W axis.

SECOND STEP

Locate value 2,750 on V axis.

THIRD STEP

Connect these two values with a straight
line, giving Line No. 1 on Chart.

FOURTH STEP

The intersection of Line No. 1 with the E
axis gives the required muzzle energy 2,900
foot-seconds.

E.I. DUPONT DE NEMOURS & CO.
BRANDYWINE LABORATORY
NO. 9 OF A SERIES OF 9 DRAWINGS
FILE NO. 0535

The Rifle of the Past

(Continued from Page 14)

baking soda, and boil slowly down to about half of its former bulk.

A good, lively, squirt can that will throw the oil clear through the bore is extremely handy to keep it applied with.

You are about ready to start now. Hold your rifle barrel in the vise, muzzle farthest from you. Insert the stick at the muzzle, with the cutter in place, and pull it into the muzzle just enough to see whether the cutter very slightly scrapes the bottom of the groove in the bore. Pull it clear through the slot; start over again with the cutter entered into the next groove, and so on until a scrape has been taken out of every groove. It may cut at some places and not at others so keep at it until it cuts no more, anywhere.

To make the cutter cut still deeper, at any time, place a slip of tin, tinfoil, or paper behind it, at the bottom of the slot. Tin makes a heavy cut, tinfoil a medium cut, and paper a slight one. Slight cuts, and a very sharp cutter, should be used toward the finish, both as to groove and land.

When you are satisfied with the job you have done on the grooves, cut the old leads off of your stick and recast new leads that situate the cutter slot properly to cut lands, instead of grooves. Make the cutter for your lands somewhat wider than the lands actually are, so it will be sure to extend beyond the edges. Otherwise the procedure is exactly the same as that followed in cutting the grooves.

Before you cut away the old leads, mark the position of one of their ridges on the muzzle of the barrel, with a sharp pointed tool. I use the groove situated near the front sight as a convenient point from which to begin any routine procedure. Keep the sight on top, in the vise.

One thing I might say, these old rifle barrels are almost invariably made of iron, and hand-forged iron, at that. They are rather apt to have slight seams and spots in them, almost anywhere. So do not expect to achieve a bore that is like Niedner, or Pope, work inside.

You can tell, by the way the cutter acts, that some parts are hard, fine grained iron, while other places will be soft and will not cut so smoothly, nor finish as well.

Those who rifle barrels, but have never worked on the old kind, may be amused by advocating the use of a "file toothed" cutter; but it assuredly is far better than the solitary "hook" tooth they use, for the purpose in question.

A hook tooth is splendid for use on uniform material, that is handled by skilled workmen, with appliances allowing very exact work. Otherwise, it will dig holes in the job, and probably insure their being put on the same job in the next world,—down in the basement, with barrels that are red hot, too.

If any explanations are needed, send your letter to this paper, and I will help out in any way possible.

Ramblings of An Old Timer

(Continued from Page 12)

and had as passengers three squaws. Their bucks were mounted and struck across the country for the same place, Stillwater. The road was down the bottom of Rose Bud Creek. In that country it is open, with the exception of the streams, which are quite brushy. As we came within sight of where Stillwater River and Rose Bud join there was a bunch of willows standing out from the main stream a half mile or more. At the distance from us it did not look very big but covered almost an acre of ground. Beaver Creek came in below this patch a mile or more. The bucks that struck across country scared up two white tail deer and they were running for cover in the brush of Stillwater Creek. The squaw nearest to me called attention to them. Not stopping the team, which was in a trot, I reached for the old Sharps and just as the lead deer came from behind the willow patch, I let go at him. I sure missed him a long way, but the one that was trailing ran into that bullet and went end over end. The distance was close to half mile, a lucky shot and one that surprised me. The squaws thought it was a Medicine Gun and asked me if I aimed at that one, so I just fibbed a little and said "Yes." They told their bucks about this gun and I had all kinds of offers for it. My intentions were to keep this gun as long as I lived but circumstances over which I had no control took her and another one from me, which I will mention as a close second to Miss Sharps.

This gun I will introduce to those who don't know her as Miss Winchester, the 1873 model, caliber .44, the gun that made fame for the Winchester Repeating Arms Company. Wasn't she a wonderful gun? There never was nor ever will be a repeater made that can act with her as a killer of big game. She did more to help exterminate the vast herds of American buffalo that used to roam over the territories of Montana and Wyoming by the countless thousands than any rifle made. It was impossible with this gun to charge a buffalo herd on a well trained hunting horse and kill a buffalo at every shot until the magazine was empty. I will try to explain how a horse was trained. First he had to be a fast sure-footed animal and was ridden stripped as we called it, not a string on him, no saddle, or bridle. Of course you had to be a good bare-back rider and when you mounted for the chase your hands were free to handle your rifle. The Indians trained most of these horses. They rode the same way, with the exception that some would use a lead rope on them. This horse was always led till the time came to mount or game was spotted, then you dismounted and topped the war horse and the chase was on. Talk about excitement! Just imagine you were skimming over the plains on the fastest animal in the world after an equally fast buffalo cow, throwing the dust at every jump—and say, believe me those cows could go. I am sure no grander sight ever was seen for when they started to go they ran straight. Usually we would strike

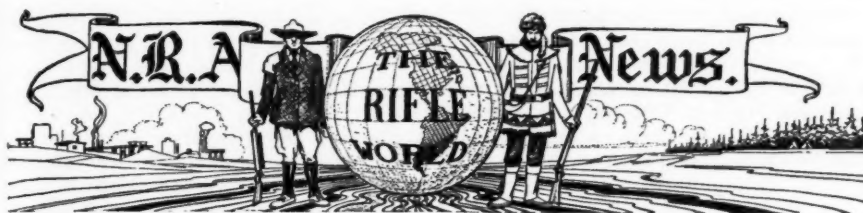
the herd on the right hand side if possible, and when the horse ran alongside of a buffalo this would give you the best and easiest shot. The spot to shoot at was just behind the shoulder, the ball going through the lungs and out the opposite side—a fatal shot. At the report of the gun your horse would turn to the right, passing the stricken buffalo and close in on the next one. This performance was continued until your mount was winded or your ammunition gave out. Those old horses were very wise. They would close in pretty close to a buffalo, but when you shot they would quickly turn or oblique to the right, keeping out of the way of the mortally wounded animal. I actually believe they liked the excitement of the chase as well, if not better, than their riders. Those old days are gone forever, when we had our two horses, one to hunt on, one to ride—and are never to be forgotten. In those days our gun and horse were the last words—our best friends and our only protectors. And to think there is a movement to deprive us of our birthright by disarming or denying us the right to bear arms. It is far from being dead medicine as the Crow Indian says.

Miss Winchester was a bad actor on game of any kind and was a great favorite with the old timers of the plains. Just to show her killing power on bears, I will relate how a rancher cleaned up a bunch of silvertips.

A William Shanks, by name, living just across the Yellowstone River from where the station of Grey Cliff on the Northern Pacific Railroad in Montana is, saw a bear in his meadow among the wild rose bushes eating rosebuds so took his Winchester and started for the bear. He got quite close as bears at that time were plentiful and were not shy or afraid of man, and shot the animal through the head. At the report of the gun six more large ones stood up. He took them in rotation. All were shot through the head—seven bear seven shots. A most remarkable performance for that old Winchester and then to have some say "She's no good for big game." You never could make Billy Shanks believe it. Mr. Shanks was a pioneer rancher of Montana, an Indian fighter and an all-round good and truthful man.

I never took to the later models of the Winchester make. Perhaps it was because I was welded to the 73 make and could not, or would not, give up to any other. I never saw what they called a poor rifle of that make come from the factory. They were all good and I have made some wonderful kills on deer at long range. Most game is shot at closer range than one would imagine. Even today one kills more deer under 75 yards than over it. I am sure the biggest part of my killing has been at 50 yards.

I never could understand why mountain sheep are so hard to kill today. I consider them to be the easiest of any of the big game to get and the 73 Winchester was dead medicine for them. I have used most all of the modern high power rifles of factory make and find them good. All guns are good. Don't take my word for it.



Conducted by C. B. Lister

COLUMBIA UPHOLDS TRADITION

Among the colleges which believe in upholding the tradition of American marksmanship is Columbia University. It is taking particular pains in training its freshmen in the art of rifle shooting with the result that they are making an excellent showing. Shooting against the Central High School of Washington the Columbia freshmen made a score of 497 against 495. Incidentally they have defeated Rutgers, Syracuse and Penn.

The varsity team has set the freshmen an example, having won from C. C. N. Y., George Washington, Syracuse and Penn State.

With such an attitude in a leading American college, the outlook for making America once more a nation of riflemen is hopeful.

ALL SECRETARIES WILL BE INTERESTED IN THESE ITEMS

The following extracts from the annual report of the Elgin Rifle Club, Illinois, submitted by the secretary, Lt. E. B. Lloyd, will be of interest to all civilian club secretaries as indications of what can be accomplished when there is a real desire to accomplish something.

"The club's indoor range is located on the fourth floor of the City Hall and is thrown open to the police department one afternoon and one evening each week." One of the club members who is a police officer acts as instructor in pistol shooting for the police department. Through the efforts of our club, target practice is now required of each officer every week, the city having purchased .22 calibre revolvers, targets, and ammunition, and many officers are becoming quite proficient.

"The Home National Bank has borrowed some of our equipment, targets, etc., on several occasions and we have supervised their target practice and assisted them in the establishment of a range in the bank basement.

"The superintendent of outgoing mail of the postoffice is an active shooting member of our club and is assigned to look after the shooting interests of the post office employees.

"No particular campaign was made for new members, but during Memorial Day week a window display of rifles, pistols, medals, targets, and photographs was arranged in a local store and attracted a great deal of attention. In fact, it was this display which prompted me to look up a mem-

ber whose likeness I recognized in a photograph and who subsequently applied for membership in the club.

"An indoor training school of instruction under the direction of our executive officer, a graduate of the Camp Perry School, is in full swing and we expect to qualify many more shooters in the prescribed courses next season. Our first president, Capt. Morgan Brightman, has donated a handsome trophy and some ten medals will be ordered for indoor competitions during February and March. We have already received five new applications for membership this year and two of our members have become life members of the N. R. A."

* * *

UNIVERSITY OF PENNSYLVANIA DEFEATS CAVALRYMEN

The University of Pennsylvania Rifle Team defeated a team representing Second Troop, Philadelphia City Cavalry, in a match fired the evening of February 12th. The Match was held at the University range. It called for five-man teams, all scores to count, firing prone, kneeling and standing. The University riflemen took a commanding lead with the first stage and increased it with each succeeding stage.

The score:

UNIVERSITY OF PENNSYLVANIA				
	P.	K.	S.	Total
Valgenti	99	98	96	293
Henderson	99	92	92	283
Douglas	99	93	77	269
Lerch	100	95	73	268
Ball	99	79	81	259
	496	457	419	1,372

SECOND TROOP				
	P.	K.	S.	Total
Wood	99	92	89	280
Rule	100	81	84	265
Hounsell	98	93	73	264
Robinson	95	76	64	235
Vasey	84	53	38	175
	476	395	348	1,219

* * *

V. P. I. HIGH IN MATCH

The Virginia Polytechnic Rifle Team of Blacksburg, Va., shooting against the Denison University Rifle Team of Granville, Ohio, shot 3,751 points against 3,290 made by the Ohioans. The scores follow:

DENISON		VIRGINIA	
Vian	358	Lucas, R. L.	388
Smith, R. D.	345	Stuart, W. M.	384
Farmer	339	Lawrence, H. M.	383
Heinrichs	331	Avery, H. S.	381
Carlock	325	Harmon, R. D.	377
Cary	325	Davie, G. M.	373
Levering	323	Showalter, H. S.	371
Steinberger	317	Aiken, C. D.	366
Boannell	315	Lewis, R. R.	363
Brainard	312		
	3,290	Millhiser, C.	365

677

WOMAN COACHES BOYS TO VICTORY

Lake View High School of Chicago has captured the school city championship outshooting the Lane School riflemen in a shoulder-to-shoulder match on the Hamilton Club range, Jan. 19, by 1,729 to 1,639. Austin High, on the same range a day later, managed only a score of 1,394. This was explained by the fact that Englewood, which was scheduled to appear, let the match go by default and the Austin boys naturally were a little careless in going through the formality of shooting a certain victory. The boys shot .22 calibre, single-shot muskets issued by the War Department. Robert Belt, particular ace of Lake View, won the individual championship. Timmerman, Blomfield and Horvath of Lake View finished second, third and fourth in the individuals, while Ward of Lake View tied Bodinius, Lane's high-point man for fifth place. Lake View is coached by Miss Mary C. Monahan, a teacher in the school, and an excellent shot. Miss Monahan is a sister of Stephen D. Monahan, who was on the American team which went to Peru and is believed to be the only woman coaching a boys' school team.

* * *

OSSINING CLUB ACTIVE

The following announcement by the Ossining Rifle Club indicates that the officials of the club are on the job:

Any Saturday afternoon. All day, Sundays and holidays, up to and including May 2, 1926. Shoot your matches at your convenience. Plenty of "Sighting in" shots before each and every match, but no sighting shots allowed in between, in case you break off a match and finish at a subsequent time. Practice and shoot in competition with the best of them. Pick up the shooting dope—right. Everybody welcome.

Taxi from New York Central Ossining station, one, two or three persons, 75 cents; four persons, \$1.00. All matches to be shot on Ossining Rifle Club Indoor Ranges, Hawkes Avenue, Ossining, N. Y. Bring family, friends, and grub basket. Cook on Club stove. Tighten up for the indoor matches and get in shape for the outdoor season. Get your outfit together now.

Range Fees: 25 cents a day to non-members.

Entrance Fees: 50 cents for each match—to non-members. Members pay no entrance fees.

Targets: N. R. A. for all rifle ranges. Regular 20-yard pistol target for pistols and revolvers.

Cartridges: Everything limited to .22 caliber rim fire.

Offhand Rifle Matches

Match A—100 consecutive shots at 25 yards. Prizes: Winner takes all. Gold Medal from Ossining Rifle Club and all entrance moneys paid into the match.

Match B—50 consecutive shots at 100 yards. Prizes: Winner takes all. Gold

Medal from Ossining Rifle Club and all entrance moneys paid into the match.

In above off-hand matches any rifle, any sights, any triggers.

Prone Rifle Matches

Match C—100 consecutive shots at 50 yards. Prizes: Winner takes all. Five Dollar Gold Piece from Ossining Rifle Club and all entrance moneys paid into the match.

Match D—100 consecutive shots at 100 yards. Prizes: Winner takes all. Gold Medal from Ossining Rifle Club and all entrance moneys paid into the match.

In above prone matches any rifle, any sights, with not less than 3-pound triggers.

Prone Iron Sight Rifle Match

Match E—50 consecutive shots at 100 yards. Prizes: Winner takes all. Five Dollar Gold Piece from Ossining Rifle Club and all entrance moneys paid into the match.

In addition to iron sights in above match, not less than 3-pound triggers.

Pistol and Revolver Match

Match F—50 consecutive shots at 20 yards with the American pistols and revolvers, not over ten inches between the iron open sights, and with non-set-triggers. Entries with the so-called "International" pistol must shoot on the same 20-yard pistol targets, but at 25 yards. Prize: Winner takes all entrance moneys paid into the match. If well patronized we will add a Five Dollar Gold Piece.

All ties to be shot off in 25-shot strings.

* * *

OHIO RIFLE LEAGUE ACTIVITIES

Rain and icy roads did not keep the shooters of District Five of the Ohio Rifle League away from the elimination and team match recently. Forty-six shooters from nine clubs fired the match at the Columbus Business Men's Rifle Club. The course was five shots standing, five kneeling, five sitting and five prone at 50 feet, any sights. The Columbus Business Men's Rifle Club beat its nearest opponent, Mt. Vernon, by forty points. Individual honors went to Donald McMillan, Mt. Vernon, the best shot in Ohio, score 198. This score appears to be a record in Ohio matches. Corfman and Bardon were next with 192 each.

The Ohio Rifle League has stirred up some real interest in rifle shooting. We are going to have a match in February that is going to make some of the other organizations sit up and take notice for attendance. I am confident we will have over two hundred individual entries.

Columbus Business Men's Rifle Club.....	938
Mt. Vernon Rifle Club.....	898
Columbus Rifle Club	895
Delaware Rifle Club.....	868

The elimination was open to all clubs in District, but the match fired in February will be confined to members belonging to a club affiliated with the Ohio Rifle League. This will be the only event in the Ohio Championship and Dispatch Rifle Tournament that is not open to all.

The Columbus Business Men's Rifle Club placed five on team and five alternates; Mt. Vernon, two on team and one alternate; Columbus Rifle Club, one on team and two alternates; Richwood, one on team and one alternate; Marion, one on team; Marysville and Delaware each placed an alternate.

* * *

OBTAIN BIG DRILL HALL

Through the courtesy of Major Kempher, post commander at Fort Hayes, the committee in charge of The Columbus *Dispatch* tournament and the Ohio Championship Rifle matches to be held in Columbus February 20, 21 and 22, has obtained the use of the large drill hall on the government reservation for range purposes, instead of the ranges at the Ohio State University, as was at first announced.

The drill hall is a large, commodious building, well heated, lighted and ventilated and is admirably fitted for indoor rifle shooting. The room is 100 feet wide and 200 feet long and not marred by post or pillar.

Arrangements are now being made to install 30 targets butts or backstops. They will be built in permanently so that in the future shooting events of this nature can be held on this range.

This will give to Columbus one of the largest indoor shooting ranges in the United States, and annual interstate and national shoulder-to-shoulder matches will be held here.

The Ohio Rifle League, in cooperation with The Columbus *Dispatch*, has arranged an exceptionally well balanced program for rifle shooters, both men and women, and present indications are that about 300 rifle fans will participate.

Full details of all of the matches and prizes are being published in The Columbus *Dispatch*.

Programs in convenient booklet form will be ready for distribution about February 1. These may be obtained by addressing Dr. McManes, chairman match committee, Piqua, Ohio.

* * *

SEATTLE RIFLE AND REVOLVER CLUB ELECTION

The Annual Meeting was held January 30 in the State Armory. We are ashamed to tell how many members were present. Election of officers resulted as follows:

President, Eugene Hicker.
Vice-President, Harry C. Prothero.
Secretary-Treasurer, Chas. C. Finn.
Executive Officer, Robt. E. Miller.
Director, Geo. R. Farr.

The dues remain at \$3.00 with no initiation fee.

We accepted the challenge of Fort Lawton to an off-hand match to be held Sunday, March 7, at 9.30 A.M. Two sighters and 10 shots for record at 200 yards; Target A. Everyone shoot and the 5 high count for the team. Full details later.

The INDOOR TEAM is shooting every Friday night on the State Armory range.

We have entered a team in the Civilian Interclub Match at 50 feet. All who have .22 rifles are welcome to shoot. First stage of the match was shot Friday evening, February 12.

Note that the Secretary's report was left out of the report of the Annual Meeting. The Secretary reports the Club in good financial shape and lacking nothing but members who want to shoot. If you can't come to the matches yourself, make an effort to get a new member who will shoot.

* * *

HOW TO GET THEM OUT TO THE ANNUAL MEETING

The job of getting members out to attend the annual club meeting is almost as hard a proposition as getting the members to pay their dues. The Whiting, Iowa, Club is working a plan this year which ought to bring results. In their notice of the meeting, after telling all about the activities of the club, they conclude with the following pithy paragraph:

"When the meeting is adjourned, the club will give away four ducks, for free competition for members only. Beginners will shoot in a class by themselves. Be present and bring a new member if possible."

* * *

LOST GAME IS FOUND

A notable scarcity of such migratory wild fowl as ducks and geese occurred during the recent fall and winter flight in a number of the western States, particularly in California. Sportsmen expressed alarm at this scarcity, fearing it indicated a permanent decrease in the numbers of these birds.

The Biological Survey of the United States Department of Agriculture reports that there was a large northward flight of birds in the spring of 1925, and that during the third week of January, 1926, showed an unprecedented number of ducks and geese remaining along the coast of southern Alaska and northern British Columbia. An abundance of ducks and geese has been noted as far north as the flats about the mouths of the Copper and Bering Rivers. From Wrangell, Alaska, come reports of many ducks and geese on the flats near there. The Stikine River flats in northern British Columbia are reported to be free of snow and ice. A wireless dated January 22 from the Alaska Game Commission advised the Biological Survey that large numbers of mallards and thousands of geese were on the Stikine flats, an occurrence explained by unusually warm weather in the north.

The scarcity of birds in various parts of the West during the fall and winter of 1925-1926 does not necessarily mean a corresponding actual decrease in the total number of the existing wild fowl. Mild fall and winter weather in southern Canada and along the northern border of the United States and the deficient rainfall in the West have caused erratic movements among these birds, many of their usual haunts having been passed over by them in the southward flight.



(A Unit of the National Rifle Association devoted to teaching every boy and girl in America the safe and accurate handling of the rifle.)

UNIT QUALIFICATION AWARDS

Those Units who have recently qualified for the "Marksman" and "Pro-Marksman" distinction in the Winner Seal Contest were pleased to receive the Winner Seal "Dollar Value" Certificates which were forwarded the past week. The certificates are awarded to any Unit winning ten matches, and are distributed individually according to the number of boys or girls regularly shooting on the team.

Not more than ten certificates, however, will be awarded to any one Unit, regardless of the number participating, as this is the maximum number given. Each of these awards has a face value of \$1.00 in merchandise and when properly indorsed entitles the indorsee to supplies to the amount of the certificates. Any material listed on the Junior price list (printed below) may be obtained by these, or they may be returned as payment toward medals that the holder has qualified for and wishes to purchase.

In cases where the Unit as a whole desires to use these in buying a rifle or ammunition in case lots for the use of the Unit the individual certificates will be accepted as part payment. The following Units have qualified for the awards as specified below, and have received their issues of credit certificates

UNIT	QUALIFICATION	CITY
91	"Marksman"	St. Louis, Mo.
327	"Pro-Marksman"	Davenport, Iowa
1,884	"	Waterbury, Conn.
2,303	"	Waterbury, Conn.
2,660	"	Menominee, Mich.
2,670	"	Webster Groves, Mo.
2,742	"	St. Louis, Mo.
2,750	"	Hartford, Conn.
2,768	"	Chicago, Ill.
2,813	"	St. John, N. B., Can.

SUPPLIES AVAILABLE TO N. R. A. J. R. C. MEMBERS

Any of this material may be procured with Winner Seal Credit Certificates.

RIFLES

Winchester, Model 32, Cal. .22 long rifle, New Model stock, with blocks.....	\$41.00
Winchester, Model 52, Cal. .22 long rifle, Old Model stock, with blocks.....	32.00
Savage, Model 1919, Cal. .22 long rifle, 28-in. barrel, 5-shot magazine.....	18.50
Stevens, Model 414, single shot, Cal. .22 long rifle.....	17.50
Winchester, Model '90, Cal. .22 short or .22 long rifle.....	22.00
Winchester, Model '06, Cal. .22.....	19.35
Winchester, Model '04, Cal. .22; these handle any .22 cartridges.....	8.00
Winchester, Model '02, Cal. .22.....	6.60

AMMUNITION

Winchester "Precision," Cal. .22 long rifle, per case 5,000 rounds.....	33.00
Peters "Tackhole," Cal. .22 long rifle, per case of 5,000 rounds.....	27.50

Remington "Palma," Cal. .22 long rifle, per case of 5,000 rounds.....	27.00
United States "USNRA," Cal. .22 long rifle, per case of 5,000 rounds.....	26.00
Western "Marksman," Cal. .22 long rifle, per case of 5,000 rounds.....	26.00
Winchester, Lesmoke, Cal. .22 (shorts), per case of 5,000 rounds.....	22.00
Remington, Western and Peters, Cal. .22 (shorts), per case of 5,000 rounds.....	17.00

Less Than Case Lots

Winchester "Precision," Cal. .22 long rifle, per 1,000 rounds.....	7.00
Peters "Tackhole," Cal. .22 long rifle, per 1,000 rounds.....	6.25
Remington "Palma," Cal. .22 long rifle, per 1,000 rounds.....	6.00
United States "USNRA," Cal. .22 long rifle, per 1,000 rounds.....	5.75
Western "Marksman," Cal. .22 long rifle, per 1,000 rounds.....	5.75
Winchester Lesmoke, Cal. .22 (shorts), per 1,000 rounds.....	4.75
Remington, Western and Peters, Cal. .22 (shorts), per 1,000.....	4.00
United States Lesmoke, Cal. .22 (shorts), per 1,000 rounds.....	6.25

TARGETS

Small Bore, 50-yard Official N. R. A. targets, per 1,000.....	8.00
Gallery, 50-ft. and 75-ft., slow or rapid fire, per 1,000.....	5.00
Standard NRAJRC, plain single bull practice targets, per 1,000.....	2.00

(Instructors of active Units may secure these without cost.)

CLEANING MATERIAL, ETC.

Cleaning Patches, Cal. .30 (can be cut and used for .22), per 1,000.....	1.00
Stazon Kits (containing preservatives, solvent, rust-off, gun oil), each.....	1.00
Peckers Walnut Stock Dressing for keeping finished stocks waterproof.....	.50
Cosmic (a grease to preserve the rifle when laid away), per quart.....	.65

BOOKS

N. R. A. Official Score Books, loose-leaf, containing assortment of sheets for recording small bore firing, each.....	.50
Extra Shoots, per fifteen sheets.....	.10
"Care and Cleaning of Modern Firearms" (Whelen), per copy.....	.25
"Amateur Gunsmithing" (Whelen), per copy.....	1.50
"Rifles and Rifle Shooting" (Caswell), per copy.....	6.50
"THE AMERICAN RIFLEMAN," published the 1st and 15th of each month.....	3.00

Per yearly subscription..... 3.50

SPECIAL: To members of N. R. A. or N. R. A. J. R. C..... 2.00

This is the Official Publication of the National Rifle Association. It contains articles on how to shoot, how to use telescope sights, stories of hunting in all parts of the world, the results of matches, and what kinds of guns and ammunition were used by the winners; descriptions of successful club activities and many other matters of interest to all shooters. Your father will be as interested in this magazine as you will be.

Instructor Harold D. C. Kinney has made the sport of rifle shooting a feature among the young folks of Mundelein, a suburb of Chicago, Illinois. One boy, Jevne Rhenish, comes all the way from Oak Park, about forty miles, to visit his cousin and shoot with the group. He has qualified for his Pro-Marksman and Marksman Medals, and has taken them to his school where he gets a great deal of recognition, since no others have any. It is expected that a new Unit will be chartered in Oak Park very soon.

They recently held a Father and Son Banquet in the Community House which was a fine success; 106 Fathers and Sons were present. The mothers of the Community served the dinner free under the auspices of the Woman's Society. The Community program is for all boys and many denominations were represented.

Before the banquet, while the crowd was gathering, Fathers and Sons went to the range, and, to the amazement of many dads, their sons cleaned up on them! Some dads had not shot in years—one said it was the second time in thirty years—and so the sport and fun of their early days came back to their memories, and helped make them feel more "en rapport" or in sympathy with the boys. This helped very much to create a fellowship between Father and Son, that their usual line of games together would not have put over.

Prof. W. Ryland Boorman, head of the Boys' Work School of the Y. M. C. A. College of Chicago, was the main speaker of the evening. Inst. Kinney, a senior at the college and assistant in Research in Boys' Work, under Prof. Boorman, also gave a very interesting and instructive talk on proficiency and physical fitness, and also presented the medals.

Only the Sharpshooter medals and bars were held for presentation at the banquet. An outstanding feature of the winning of these was that the boys thought the "25" targets were way beyond their reach, but found them much easier to attain than expected after mastering the use of the sling. The most important things that helped them win bars were learning to practice the rules on breathing and squeezing.

The girls are also taking an interest in the sport, and Instructor Kinney reports that two girl Units will soon be organized and a Mother and Daughter Banquet will be in order with N. R. A. J. R. C. awards as part of the program.

FRAMES FOR YOUR N. R. A. J. R. C. DIPLOMAS AND CHARTERS

For every set of qualifying targets submitted to National Headquarters a diploma is issued designating the rank accomplished. These are of more value to you than the medals, and are well worth preserving for your trophy or club room. This also holds true for the Unit charters issued to all Instructors when a group of from seven to twenty members are enrolled as a team with an adult in charge.

A very inexpensive and satisfactory way of framing these diplomas and charters is by the use of passe-partout binding. Cut out a piece of cardboard, also a piece of glass the exact size of the diploma or charter. Place the diploma face down on the piece of glass. Next lay the cardboard on the diploma. Before binding insert two round-head paper fasteners in the cardboard by which to attach picture cord for hanging. Next cut off enough passe-partout binding to go around the edge. Moisten

the gummed side and bind firmly and evenly so as to make a uniform margin all around the outside of the glass.

When you have finished, you will not only have your diploma and charter suitably framed, but you will also have the satisfaction of knowing that you have done it yourself.

FIVE BULL TARGETS FOR WINNER SEAL MATCHES

National Headquarters is always ready to cooperate with any constructive requests. Occasionally instructors write in asking what can be done to speed up the Unit Matches. We believe we have the solution.

From now on, unless otherwise requested, the new five-bull targets will be mailed for all Winner Seal Matches arranged. This should help to speed up the work considerably. In these matches, as many as ten members may represent the Unit, and the five high total scores count for team total. Using the single bull targets, a member had to shoot on four separate targets. By the use of the five bull target a member now only has but one target to shoot on, saving time in the running down of targets, also filling in one target, where before he had to fill in four. The instructor also has now

but one target to witness and sign. You will also find that there is now a saving in postage, as only ten targets are mailed each Unit, whereas forty were mailed before.

On the five bull targets use the center bull for two sighting shots only. The remaining four bulls are for record, placing five shots in each for a possible one hundred on each target.

Miss Doris Anderson of London, Ontario, Canada, has now completed her ten lessons of the Instructors Correspondence Course and has qualified for the Instructors medal, submitting ten targets, scoring twenty-four points or better on each.

Chief Instructor E. E. Murtagh has requested that the Instructors' Commission and medal be forwarded direct to him as he is planning for a special meeting when the Mayor of London will make the formal presentation. Miss Anderson is the first young lady in London to receive the N. R. A. J. R. C. Instructors' Commission, and we congratulate her.

Instructor Edward Baisley of Unit No. 2,918 of Orlando, Florida, is doing a splendid piece of work in his community. The

boys are fast qualifying for the various individual medal awards, and only recently the Unit entered the Winner Seal Weekly Matches. They have an open challenge to any N. R. A. J. R. C. Unit entered in these matches.

The local paper is highly progressive and gives a write-up each Sunday of the Units' accomplishments. In fact, the paper is interested in all boy activities and only recently conducted a bicycle race and a casting tournament.

The sporting editor is cooperating with Instructor Baisley in making the sport of rifle shooting a popular Junior activity in Orlando, and is assisting in getting under way a suitable place for a range so that a number of Units may be accommodated.

Instructor Baisley is anxious to organize several of these Units and conduct a local tournament. It is very likely that the local paper will put up a local championship trophy.

Other Units Notice! This is just the kind of cooperation and assistance you need to make your Unit as active and alive as Instructor Baisley's. Appoint one of your Unit members as "Reporter" for the Unit, and see to it that each week a write-up is given your local sports editor for publication.

THE N. R. A. "OWN YOUR OWN" PLAN

American boys have always been noted for their spirit, their desire to earn their own "spending money" and their willingness to get out and hustle for their sporting equipment—baseball, football, etc. No group of boys has shown any greater willingness to pay their own way than the members of the N. R. A. Junior Rifle Corps.

In an effort to help these young riflemen obtain better equipment and to make it possible for boys now using borrowed rifles to obtain rifles of their own, the N. R. A. has worked out the following plan. It is a simple plan. It is a workable plan. It is a plan which not only enables the boy himself to acquire personal equipment, but also offers the Unit a chance to acquire club rifles or to add funds to the Unit treasury.

THE PLAN

Each dollar collected represents 1 "credit." That is—

A Life Membership in the N. R. A. costs \$25.00 and counts 25 credits.

An Annual Membership in the N. R. A. costs \$2.00 and counts 2 credits.

A year's subscription to The American Rifleman costs \$3.00 and counts 3 credits.

Members of the N. R. A. are granted a special subscription price of \$2.00 per year for the magazine but in all cases where such subscriptions are sent in they will be counted as *three* credits, the same as if \$3.00 were sent in. In other words, every combined application for Annual Membership at \$2.00 and subscription to The American Rifleman

at \$2.00 (Total, \$4.00) will be given 5 credits (2 for Annual Membership and 3 for subscription.)

Credits may be redeemed at any time. For instance, if sufficient credits have been earned to secure a Savage Rifle, with a few over, the rifle may be requested and the boy or unit may go right ahead earning additional credits for ammunition or another rifle or whatever is desired.

CASH OPTION

If your Unit needs cash or if you prefer cash to the premiums listed you may retain 25c out of each \$1.00 collected. For instance—you collect \$3.00 for a subscription to the American Rifleman—if you wish the cash commission instead of one of the premiums you send the N. R. A. \$2.25, retaining 75c out of the \$3.00 as your commission. If you secure a Life Membership at \$25.00, you forward \$19.75, retaining \$6.25 (25c out of each \$1.00) as your commission.

ALL MEMBERS OF A UNIT MAY WORK TOGETHER

Members of Junior Rifle Corps Units may all work together either for premiums or cash. In this way Units may obtain one or more high grade target rifles for use in their matches with a resultant increase in the number of Winner Seal Certificates they will win. In the case of Units working under this plan the Unit instructor should make certain that all subscription and membership blanks bear the Unit Number and not the boy's name who secured the applications.

WHAT YOU WORK FOR

All the following items of equipment may be secured under this plan:

RIFLES	N. R. A. Credits Price Required	No. of Credits
Winchester Model 52-new model	\$41.00	100
" " 52-old model	32.00	80
" " 90	22.00	52
" " 04	8.00	20
" " 02	6.00	17
Savage " 1919	18.20	45
Stevens " 414	17.50	43
TELESCOPE SIGHTS		
Winchester, 5-A	40.00	100
Stevens No. 468 (for Savage 1919)	22.00	52
AMMUNITION		
U. S. Long Rifle case of 5,000	26.00	64
" " " carton of 500	2.88	7
" " " case of 5,000	16.00	40
" " " carton of 500	1.88	5
Remington Long Rifle case of 5,000	27.00	65
" " " carton of 500	3.00	7
" " " case of 5,000	17.50	43
" " " carton of 500	2.00	5
Winchester Long Rifle-case of 5,000	33.00	81
" " " carton of 500	3.50	8
" " " case of 5,000	22.00	52
" " " carton of 500	2.38	6
Peters Long Rifle-case of 5,000	27.50	65
" " " carton of 500	3.13	7
" " " case of 5,000	17.50	43
" " " carton of 500	2.00	5
Western Long Rifle-case of 5,000	26.00	64
" " " carton of 500	2.88	7
" " " case of 5,000	16.00	40
" " " carton of 500	1.88	5

CLEANING MATERIALS

Cleaning Patches (.30) caliber-make two 22 patches) per 1,000	1.00	3
"Stazon" Cleaning Set (solvent, preservative, rust remover and oil)	1.00	3

Remember that the figures in the right hand column above do not represent the number of members or subscribers you must send in. They show the number of *credits* you must secure. You get 25 credits for each Life Member, 2 credits for each Annual Member, 3 credits for each American Rifleman subscription.



.9854!

Highest season's average ever recorded by the A. T. A. Made by Fred S. Tomlin of Glassboro, N. J., in 1925 by breaking 2784 out of 2825 registered targets with

WINCHESTER
TRADE MARK

Model 12 Repeating Shotgun
and

WINCHESTER
TRADE MARK

Repeater Shotshells

Wonderful shooting—the earned culmination of years filled with steady, brilliant shooting—not occasional, but day in and day out.

Back in 1923 Tomlin made the remarkable record run of 248 straight from 22 yards at the Meadow Spring Club of Philadelphia. For years he has been recognized as a top-notch, consistently getting a high average of targets.

Tomlin's shooting year after year gives another proof of the dependability and uniformity of WINCHESTER arms and ammunition. WINCHESTER shells and the WINCHESTER Model 12 has been Tomlin's shooting combination for years—a combination that has satisfied the exacting requirements of a shooter who is always around the top.

It is this consistent uniformity of WINCHESTER guns and shells yesterday, today and tomorrow, that makes them the standby of hosts of shooters throughout the world.



FOR DEPENDABILITY — **WINCHESTER**
TRADE MARK

Arms and Ammunition

WINCHESTER REPEATING ARMS CO.

NEW HAVEN, CONN., U. S. A.



THE DOPE BAG



A Free Service to Target, Big Game and Field Shots—All questions answered directly by mail

Rifles and Big Game Hunting: Major Townsend Whelen

Pistols and Revolvers: Major J. S. Hatcher

Shotgun and Field Shooting: Captain Charles Askins

Every Care is used in collecting data for questions submitted, but no responsibility is assumed for any accidents which may occur.

Remodelling the Springfield

By Townsend Whelen

I RECEIVED my first copy of The American Rifleman and found it to be full of good gun "dope."

I have a Springfield, Model 1903 (the regular service model), with a Marble gold-head front sight. This is a very accurate rifle, but I don't like the bayonet lug and the military fore-end. The question is, can the stock of this rifle be cut off similar to the Krag carbine? I would like to have it stocked similar to the Krag, but with a pistol grip. Will any of the stocks listed by the N. R. A. answer the purpose? I hope I have expressed myself in a way that you can understand just what I desire. If I do away with present stock I still want to keep the sling on the one I put on in place of it.

What holds the stock and the other part of the rifle together? Is it the screw (or bolt) that goes through the stock just back of the magazine? How does the front sight fasten on the barrel by the little screw on the front of it? I suppose the front sight will have to be removed in order to remove the bayonet lug from the rifle.

If the stocks listed by the N. R. A. are what I want, please give me a list of the other things that will be required to complete the stock and have a nice looking rifle.

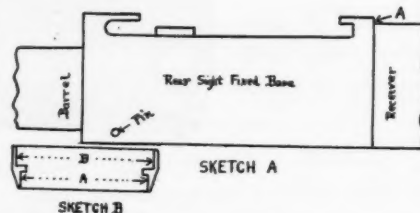
R. H. H.

Answer (by Major Whelen). I think perhaps it will be best to describe in detail to you a very satisfactory method of remodelling your rifle, which does not involve any rebluing, and which takes the minimum metal and wood work, and costs less money than any other satisfactory method.

Remove the small zero retaining screw in the front of the front sight fixed stud. Drive the front sight movable stud sideways out of the fixed stud, using a short piece of brass rod and hammer, muzzle of

barrel held in a vise so as not to run any risk of bending barrel. Loosen stacking swivel screw and take out upper band screw, and drive upper band forward off the stock, and it will then come forward off the barrel over the front sight fixed base. Discard the upper band.

Loosen the sling swivel screw on the lower band, press in the side retaining spring, and drive this lower band forward and off the barrel, placing it to one side for future use. With a properly fitting screw-driver bit held in a brace remove the two guard screws. These are the screws in rear of the trigger guard and in front of the magazine floor plate. Take care not to injure the heads of these screws. When assembling the rifle these screws should always be kept screwed up very tight, as if they are loose the rifle will not shoot accurately.



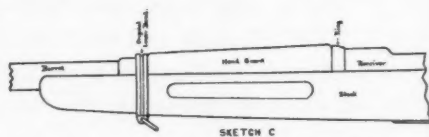
A is revealed. With a drift pin drive out this pin. Then place a brass rod at point A and drive the fixed base forward and off the barrel.

Procure from the Director of Civilian Marksmanship the following (presuming that you are a life or annual member of the N. R. A., which is necessary before you can make a purchase):

One pistol-grip stock, Model 1922, sporting type, for caliber .30, Model 1903 rifle with service dimension barrel, without rear sight base.....	\$5.00
One butt plate, Model 1922, with two screws	1.00
Packing charges	1.34
Total	\$7.34

Also procure from the Secretary N. R. A. one Lyman No. 48B receiver sight with taps and drills for .30 cal. Springfield rifle, price \$10.50.

Also procure from the Lyman Gun Sight Corporation, Middletown, Conn., one Lyman gold-head sight, 1-16-inch higher than standard, for the Springfield cal. .30 caliber rifle.



Have a machinist make a blued-steel ring which is shown in cross section in Sketch B. This is to go around the barrel and receiver at the breech to retain the rear end of the hand-guard. The inside dimension A should just fit over the front of the receiver. The diameter at B should be about $\frac{1}{8}$ inch larger than A so that it will act as a tenon for the rear end of the hand-guard. The ring should be no thicker than is necessary to assure strength.

Have a machinist spot anneal the receiver at the proper front for the Lyman rear sight base, drill and tap the screw holes, and screw the Lyman No. 48 sight

in place. Slip the ring down over the barrel to its place over the front of the receiver. Drive the front sight blade pin out of the front sight movable base, remove military front sight blade, and replace this blade with the Lyman gold-bead front sight. Place the lower band and stacking swivel on the barrel. Replace the front sight movable base in the front sight fixed base, and replace front sight screw.

Assemble new stock to the rifle. In doing so it will be necessary to cut a recess in the rear of the barrel groove for the ring shown in Sketch B at the position shown in Sketch C. Also perhaps it may be necessary to make the cuts in the stock to accommodate the Lyman receiver sight. In addition you must slightly taper, reform, and decrease the outside diameter and shape of the forearm so that the lower band will fit the new stock, the forearm of the new pistol grip stock being given the same outside shape exactly as that of the old military stock.

Now you must make a walnut hand-guard for the rifle to cover the top of the barrel from the ring shown in Sketch B to and under the lower band as shown in Sketch C. This hand-guard covers the unsightly, rough, and unblued portions of the breech of the barrel. It affords a better grip, keeps the hands away from the hot barrel, and prevents heat waves arising from the heated barrel and interfering with clear aim. It is a very useful thing. It is made quite similar to the old hand-guard on the military rifle, but quite thin and without any raise on top. A flange is left on its rear end which fits under the tenon cut in the front of the ring shown in Sketch B, just as the rear of the military hand-guard fitted under the tenon ring in front of the old military rear sight fixed base which you have discarded. The front end of this hand-guard is thinned down as shown in Sketch C so that it fits under the lower band in the same way that the old hand-guard fitted under that same band. Perhaps you can get the walnut for this hand-guard by cutting up the old military stock, or perhaps you may have to purchase a small piece of walnut for this purpose from a cabinet-maker. The inside of this hand-guard should fit the barrel snugly under the lower band, so when this lower band is tightened it binds the barrel, stock and hand-guard all closely together—this being a necessary point to insure the best accuracy.

Assemble the complete rifle, screw all the screws up tight, and you have one of the finest Springfield sporting rifles it is possible to obtain at a remodelling cost very much less than for any other satisfactory method, and with a minimum of labor.

Note that the order in which the necessary steps are given above is important in order that the parts will fit together correctly.

In all the above work you will be very greatly aided if you will get a copy of "Amateur Gunsmithing" (from T. A. R.,

price \$1.50 to members, \$2.00 to others) and follow the instructions and principles given therein. This will give you instructions for working in walnut on stock and hand-guard, and many other hints and suggestions. In addition, in the appendix it gives full instructions for dismounting and assembling the Springfield rifle. I hardly see how you can get along without this book.

I hope this letter will be of some assistance to you, and that you will carry this remodelling job to its completion. I feel sure you will be greatly pleased with the results.

* * *

WHAT is the best remedy to keep mosquitoes away from you in the woods when squirrel hunting? I have tried several that are sold for that purpose but they were not good. Do you know of the one that Emerson Hough used? I have seen it advertised but can not find it any more. O. A. H.

Answer (by Major Whelen). Emerson Hough has the following to say relative to fly and mosquito dopes on pages 67 to 70 of his book "Out of Doors," published by D. Appleton & Company, New York, 1915.

"The standby of the woods is tar and oil. Some use sweet oil, but castor oil is more distasteful to insects—nobody and nothing likes castor oil, not even a hungry mosquito. The usual formula is oil of pine tar, three parts, castor oil, two parts, and oil of pennyroyal, one part. Sometimes I add to the above a bit of oil of citronella, which is also very distasteful to mosquitoes and many other insects. This dope is liquid. The smell is not unpleasant, but the prescription requires that you put it on and do not wash it off, which to some persons, especially fastidious ladies, is something of a hardship. Don't be afraid to use it, and don't get the idea that a little dab on your nose or ear is going to keep the mosquitoes away from you; use plenty. If you perspire this dope will run. Usually you do perspire.

"All the resources of applied chemistry have been called on in the manufacture of fly dope. Some are cleaner than others, and more efficient as well. You can, for instance, take castor oil and citronella, or castor oil and oil of lavender, and look a trifle more ladylike than if you used the tar compounds. Most sportsmen agree that citronella is a good repellent.

"There is nothing so good as quinine to cure malaria which comes from mosquito bite. From this one he reasoned that mosquitoes do not like bitter things, and he concluded to put something bitter like quassia into a fly-dope of his own. He used this dope successfully in all parts of the United States and in Central America, and claimed that it made a good protection even against chigres. This inventor was Colonel Crofton Fox, now deceased, but once a well known Michigan sportsman. His recipe, which has been printed from time to time, was as follows:

Fox's Fly Dope: Oil pennyroyal; Oil peppermint; Oil bergamot; Oil cedar, F. E.; Quassia, a a Zi; Gun camphor, Z iv.; Vaseline, yellow, zii M. S.

Dissolve camphor in vaseline by heat; when cold add the remainder.

"A western firm makes a dope something like the foregoing, with the addition of oil of cloves and citronella. This is put up in collapsible tubes convenient for use. Vaseline or suet is used as a body in several of the pastes, some of which are very efficient, and all of which are cleanly and convenient to use. Most of these pastes have pennyroyal as the main repellent."

"There is a fly-dope that has been on the market thirty years, which has quite a vogue in the black-fly country. I do not know the ingredients except that oil or tar is one of them, and very likely another is pennyroyal. The mixing oil is of less importance, and we may classify this simply as one of the tar dopes. It is good against no-see-ums and black fly—those little nuisances that bite you along your hat band, or back of the ears.

"If you are going on a long and hard journey, the paste dope, which you can carry in a box, has some advantage over a liquid dope, if you carry the latter in glass. It is better to carry a liquid dope in a little screw-top tin, holding a couple of ounces or so.

"A gentlemen in Kentucky some years ago sent me the recipe which he found very efficient in the Northern woods—merely a variant of the old staples. It calls for pure pine tar, one ounce; pennyroyal, one ounce; vaseline, three ounces. The same gentleman sometimes used another formula: tar, two ounces; castor oil, three ounces; pennyroyal, one ounce. He always said that most of the volatile oils, or even camphor, lose efficiency through evaporation very quickly. But from his hints and the foregoing ones any woodsgoer can evolve a dope which will do the work as well as any dope can be expected to do."

* * *

PLEASE advise if it will be of any use to have a Winchester A-5 scope mounted on a Springfield sporter as the D. C. M. has for sale for members of the N. R. A.

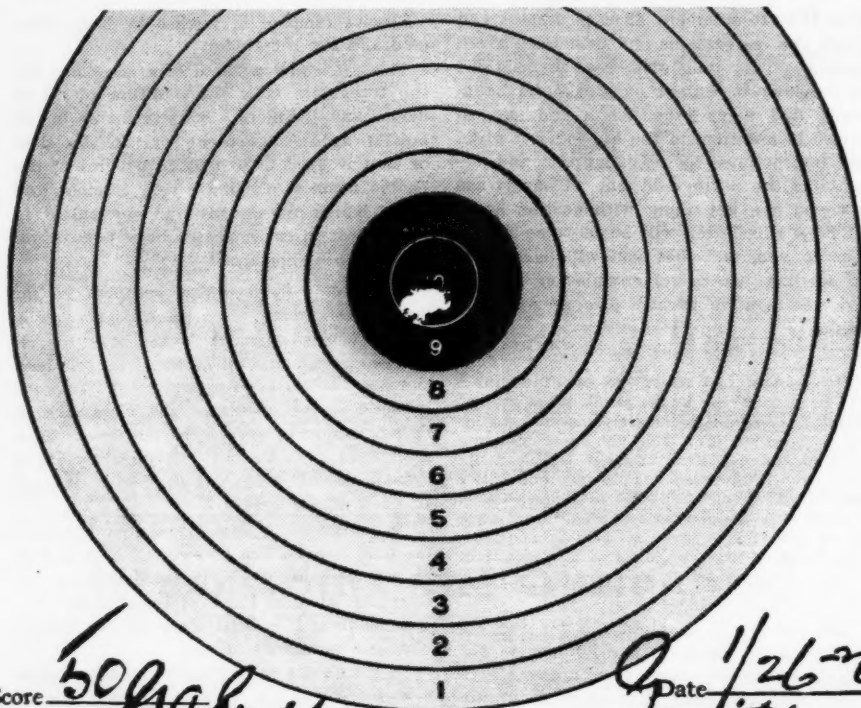
I want to use this rifle for woodchuck hunting. Can the scope be mounted on the barrel so the bolt handle will not hit the scope?

Can the new type of micrometer mounts which Mr. Fecker has designed be used with the Winchester scope? J. R.

Answer (by Major Whelen). The Springfield sporter with Winchester A-5 scope would make about the best woodchuck rifle possible to obtain. An excellent load is that made by Remington, 110-grain Hi-speed bullet, M. V. 3500 f.s. Without the scope and using one of the heavier expanding bullet cartridges, it makes the best big game rifle possible to obtain.

The Winchester A-5 scope when mounted on this rifle with Winchester mounts usually does interfere with the bolt handle. That is you have to push the scope forward about an inch before opening the bolt, and you pull the scope back to firing position after closing the bolt.

Mr. Fecker tells me that his new mountings are so made that when properly fitted they hold the scope high enough so that there is no interference with the bolt handle. I do not know if these Fecker mounts fit the Winchester scope, but think they will. Write Fecker about it.



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Name

Date

Club

(Plate from actual target)

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The Winchester scope is a very good one. I have used one almost continuously for fourteen years. But of course it was designed in 1909 and there has been a heap of improvement in scopes since that time.

I AM considering having Hoffman build me a .22 caliber target rifle on their new falling block action. What do you think of this rifle? What length of barrel and what should the rifle weigh? They (Hoffman Arms Co.) say this rifle will make one-inch groups at one hundred yards, and the action is the fastest made as the firing pin falls only $\frac{1}{8}$ of an inch. Will you tell me if this rifle would be better than some other that you could suggest?

I intend taking this rifle to Camp Perry, so I don't want it so heavy that it would be barred from the matches. I am at present shooting a 12-pound Stevens. C. L. V.

Answer (by Major Whelen). I have examined the Hoffman new falling block .22 caliber action, and although I did not have the opportunity of firing it, it appealed to me very strongly. It appears as good, perhaps better than any other .22 single shot action. If it also appeals to you, then if I were you I should order it. I would suggest that the barrel be made 26 inches long, and the complete rifle, without telescope sight, to weigh between nine and ten pounds. Butt-stock to be straight with high comb, somewhat like butt-stock on the .22 Martini rifle illustrated in the Hoffman leaflet, that is if you are going to use a scope. A rifle heavier than nine or ten pounds will tire most any man in a long series of shots, unless he is in hard training every day, and when you get tired you tremble.

No doubt the Hoffman Arms Company can give you a barrel which will be just as accurate as any barrel made, but I can not but feel that they are rather a bit too optimistic when they speak of one-inch groups at 100 yards. They may be able to turn out a barrel which will on occasions give a group almost as small as one inch, but when you get a .22 caliber barrel which will average $2\frac{1}{4}$ to $2\frac{1}{2}$ inch groups at 100 yards, and for which occasionally about once in two years you find a lot of ammunition which for a little while will average 2-inch groups at 100 yards, you have a most exceptional barrel. I have never seen or heard of a better barrel than this.

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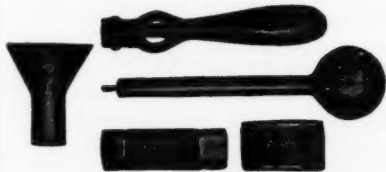
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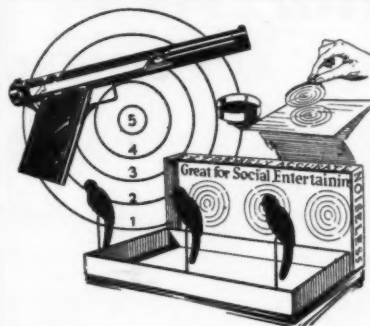
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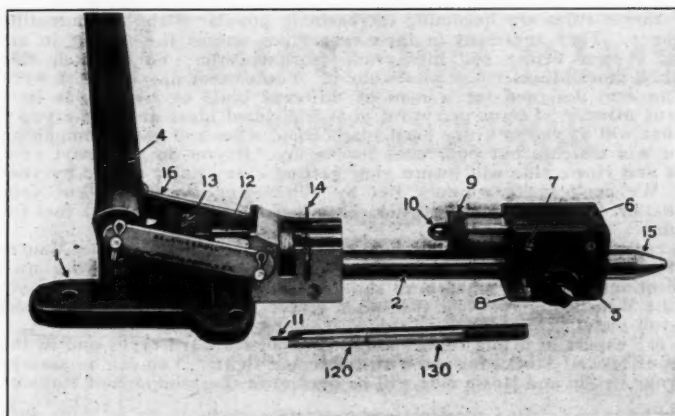
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FOR SALE OR TRADE—Fine Officer's Model, 10-shot Mauser, pistol, \$50.00; grade, \$35.00. One fine 8 mm. Wafenfabrik Mauser Rifle, Sporting Model, all engraved pistol grip, cheek rest, double-set triggers, gold bead, \$11.00, wind gauge rear sight, with sling. No war junk, a real \$120.00 grade, \$60.00. .44 S. & W. Military Model d. a., tripod locking device, fine, \$25.00. 6-in. barrel, wooden grips, square butt. Here's a fine .38-55 Schutzen, \$12.00. Extra fancy Winchester rifle, full pistol grip, double-set triggers, No. 4, 30-in. octagon barrel, fine Circassian curly stock, molds, shells, bullets, and fine sights, \$45.00. 2 fine muzzle-loading rifles, \$25.00 each. One Ballard, .38 bl., not perfect, \$10.00. .45 Sporting Model s. s. Springfield, \$4.00. Fresh gun caps, 50 cents per m., .28-30 double-set triggers, Ballard. Fine Stevens Bl., \$35.00. .33-40 Ballard Pope with molds, rod, muzzle bn. starter, palm rest, extra fancy, fine Schutzen stock made by Henry Schartz. All A-1. A real tick-driver, 17 lbs., cost over \$200.00—\$70.00. This is one of the most accurate and best guns I ever shot. 7 mm. pre-war gun, A-1 inside, plain stock, solid and good. 4 boxes S. P. shells, \$25.00. 1½ bushel of molds and loading tools, Marlin Winchester, Ideal and Ballard tools. **WANT**—Extra heavy target rifles and Remington pistols. Here is a Ballard, Winchester Match bl., .32-40, molds and rod, real accurate, double-set triggers, cheek rest. She is a good one; \$40.00. Al Hinton, Hillyard, Wash.

FOR SALE—1 Ideal model 99 loading machine, 12 ga., No. 2 receiver, lot of wads, Ideal shell indenter, .32 cal., 12 ga., re and deceiver. All for \$12.50. Sell separate. Arthur Newman, Lewisburg, Pa.

FOR SALE—Springfield service rifle. Star gauged. Lyman 48, perfect; \$32.50. B. S. A. No. 12 with scope; perfect; \$42.50. Reising Pistol with holster, ivory sight and three clips, new, perfect, \$33.00. Colt Auto., .45, perfect, with fine lined holster, \$25.00. Colt .38 P. P. 6 in., good holster, \$16.50. English hammer gun, 12 ga., \$17.50; beautiful target rifle, weighs 15 lbs., perfect, very accurate; shoots .38 cal. bullets; \$25.00. Philip Plaistridge, Winchester, N. H.

FOR SALE—Smith & Wesson .45, Model 1917, stockered walnut stocks, 2-inch Heiser basket stamped belt, chamouis skin-lined holster to match; all like new; \$32.00. R. Murphy, West Fremont St., Laramie, Wyo.

FOR SALE—Fine Sporting Springfield. For description and price write C. F. Slotter, The Bayard, New Brunswick, N. J.

WANTED TO BUY—Engraved Marlin Ballard action. Must be in good shape. Vance E. Gaskins, 655 W. Main St., Clarksburg, W. Va.

FOR SALE—Iver Johnson, champion single-ribbed barrel, 20 ga., new condition, \$11.00. Winchester musket, .22 long rifle, Lyman 41 receiver sight, very fine, \$16.00. Winchester 12 ga., lever action, fair, \$9.00. Savage .22 cal. Sporter, good, \$11.00. Good used Model 1890 and 1906 Winchester, \$9.00 to \$16.00. Colt .44 percussion, very good, \$5.00. Percussion rifle, double-set triggers, serviceable order; bore very fine; about .38 cal.; \$6.00. Discount to members N. R. A. on new guns. **WANTED**—Colt .32-20 S. A., 7½ in. fine. Earl J. Russell, Monmouth, Ill.

FOR SALE—Many different cal. ctgs. Some .44-77, .40-90, and .45-100. Sharps ctgs., also Berdan primers and percussion caps, loading tools, etc. Bud Dalrymple, U. S. Hunter, Rock Springs, Wyo.

WANTED—Hensoldt "Mountain Dialyt" Monocular, or Zeiss 10-X Monocular. Andrew Lucas, Bow Island, Alberta, Canada.

FOR SALE OR TRADE—One 12 Lefever, new, \$30.00. One 12-1897 Winchester, good, \$22.50. One 20-1912 Winchester, new except bluing, Jostam pad, \$40.00. One .44 Remington, center fire, crank condition. **WANTED**—20 S. & W., .32 frame, .52 Winchester. O. B. Olson, Frazer, Minnesota.

FOR SALE—Springfield with Winchester barrel, palm rest, Lyman 48 sight, A-1 condition, with full-length pistol grip stock, \$35.00. 260 hand-loaded shells with 180 boat-tail bullets, \$12.00. One Brown & Sharpe powder scale, new, \$10.00. Ideal No. 5 powder measure, new, \$5.00. Squibb-Miller bullet mold, \$3.00. .45 Colt's S. A., good, \$15.00. New 2-A Eastman, \$7.50. C. C. Snively, Hopkins, Minn.

FOR SALE—Colt Frontier S. A., .38-40, 5½ in., checkered walnut grips, good second-hand condition, with complete set Ideal loading tools including shell resizing die, all for \$15.00. Colt Auto., .45 cal., barrel perfect, holster and 4 clips, \$25.00. Stevens off-hand target pistol, .22 cal., 10-in. barrel, new, and 6 in. barrel, second-hand, \$15.00. Win. Mod. 94, .25-35, checkered pistol grip stock and forearm, Lyman receiver and gold-head front, half magazine, T. D. 22 in. barrel, perfect condition, \$35.00. Win. Mod. 97, 12 ga., checkered pistol grip stock, 1-30 in., full choke barrel, 1-28 in. cyl. bore, all in fine condition, \$35.00. Springfield .30-06, Star gauge, sling strap, worn head, front and rear sight; 1 extra bolt, complete, new; 1 new sporting stock, Mod. 22, milled ready to put on; all in perfect condition; \$35.00. Colt Auto., .22 cal., perfect condition, with holster, \$20.00. .38 Spec. S. & W., 4 in., Rd. butt, same as new, \$25.00. Phila. Derringer, good condition, \$10.00. No. 3 Spec. Ideal reloading tools for .38 Spec. and .45 Colt, \$4.00 each; both brand new. Ideal mold for 158-gr. Spec. bullet 358,311, \$1.50; also for 130-gr. wad cutter bullet, fine, \$1.50. Condition guaranteed on all of above. A. P. Ireland, P. O. Box 599, Sacramento, California.

TRADE—Beautiful setter dog and black pointer bitch; each about 4 months, untrained, registered ancestors. No papers on these pups. Will trade for gun crank condition pistols, shotguns or high-power rifles. R. H. Morris, P. O. Box 756, Houston, Texas.

FOR SALE—Fine P. L. muzzle-loading rifle, like new, inside and out; .42 cal.; with mold; 30-in. finely rifled barrel, solid full length sighting rib, double triggers, lock, triggers, guard and breech beautifully engraved; price, \$15.00. F. W. Gile, Selway, Mont.

FOR SALE—32 Colt's Auto., new, \$18.00. 380 Colt's Auto., new, \$18.00. S. & W. .22 single-shot target, new, \$25.00. Reising .22 Auto., new, with Heiser carved holster, \$38.00. **WANTED**—38 Colt S. A. or Bisley. W. M. Hire, Castalia, Ohio.

FOR SALE—250-3,000 Savage take-down, pistol grip, checkered, Lyman tang sight, 410 ga. shot barrel, and case; all like new; \$42.00. H. R. Lunn, Ithaca, N. Y.

FOR SALE—Savage bolt, .250, perfect, with B. & M. 3x scope and TH mount, bolt altered to allow very low mounting, Rowley check pad, an ideal outfit, extremely accurate; price, \$85.00. Hensoldt 4x scope and Noske micrometer mount, new and perfect, with base and screws, value \$61.00; sell for \$45.00; base fits any bolt-action, high-power Savage 303 lever take-down, standard weight, 22 in. barrel, Sheard front and Lyman rear, special P. G. stock, checkered, excellent condition, \$38.00. Remington trap grade, 12 ga. Auto., plain barrel 28 in., full, new, never used, \$70.00. Winchester, 12-28 in., full, auto, loading, perfect condition, \$45.00. Rheinmetal, 16 ga., 28 in., full automatic, new, never used, \$65.00. Colt, Officers' Model, 7½ in., absolutely perfect, shoulder holster, loading tools, about 100 factory ctgs., lot of reloaded ctgs., and lot of empties, \$40.00. Colt .45 Auto, perfect, \$30.00; one in good order, \$18.00. Colt S. S. A., .32-20, 5½ in., perfect, \$25.00. Colt .22 Auto, excellent, \$25.00; very good, \$20.00. Reising, complete, perfect, \$28.00; fine, not complete, \$25.00. A lot of fine rifles, shotguns and revolvers for sale at real bargain prices; closing out entire stock. Write what you want and if I have it you will get a worth-while saving in price and a guaranteed article. I have no list, so advise what you are looking for. Geo. A. Goeke, 43 West Main St., Waukon, Iowa.

FOR SALE—D. H. Parker, 20 ga., 26 in., perfect inside, leather case. First money order for \$70.00 takes it. John B. Anderson, Box 128, Houston, Pa.

WANT TO TRADE—Marlin shotgun, 12 ga., 30-in. full choked, Model 43-A, hammerless, matted barrel, almost new condition inside and out, shot only 30 times; want Springfield rifle, Model .30-06; want sporter style N. R. A., or new far-gauged N. M. Willie Snider, Mannington, W. Va., R. F. D. No. 6, Box 69.

FOR SALE—Colt Army Spec., cal. .38, Ideal loading tools, 2 boxes shells, 1 holster, 1 cleaning rod; gun new and perfect; \$22.00. G. Howard Horstman, Canonsburg, Pa.

FOR SALE—32-20 Colt S. A., 7½ in., blued, perfect condition, with Heiser holster and belt; price, \$25.00. C. R. Boothby, 316 Laurel St., Swissvale, Pa.

FOR SALE OR TRADE—Newton, .30-06 cal., like new; Lefevre Nitro Spec., 16 ga., 28 in., shot twice. **WANTED**—Springfield, Model .22, or Win. .52, and 16 ga. pumpgun. J. A. Lederman, 110 Bond St., Brooklyn, N. Y.

FOR SALE (No trades)—9 mm. Austrian Steyr automatic pistol, \$20.00. .45 Colt govt. model automatic, \$17.50. .303 Ross rifle, \$8.00. 9 mm. Steyr automatic pistol, bluing worn, \$15.00. 45 S. A. Colt, old model, \$11.00. .32 Colt Automatic, \$15.00. U. S. Navy cutlas, brass hilt, \$3.50. U. S. Civil War cavalry saber, brass hilt, \$3.00. Collection of 150 cartridges dating from the Civil War to present date. \$7.50 9 mm. Steyr ctgs., pack of 16, \$1.25. .38-90-217 Winchester express, box of 10, \$1.20. 10.75 mm. Mauser express, hollow point, box of 20, \$2.50; loose, \$9.00 per 100; .44-40-210 gr. bullets, \$1.00 per 100; .45-70-500 gr. bullets, \$1.50 per 100; .44-550 Remington bullets, paper patch, \$1.00 per box of 25; 450 Holland express, hollow point, pack of 10, \$1.75; 450-400 Eley express paper patch expanding bullet, pack of 10, \$2.50. Can supply many other cartridges loose per 100 and by the box at a considerable saving. Also rare and obsolete cartridges for collectors. W. S. Lutz, 8 S. 18th St., Philadelphia, Pa.

FOR SALE—(No trade)—.30 cal. Newton rifle, checked forearm and pistol grip, double-set triggers, perfect condition, \$45.00. 250-3,000 bolt action Savage, factory, new, \$40.00. 8 mm. pre-war Mauser sporting rifle, checked pistol grip and forearm, cheek piece, set triggers, canvas case, new condition, \$50.00. Colt New Service, .44-40, blued 7½ in. barrel, fine, \$22.50. S. & W. .35 Automatic pistol, \$21.00. .45 Colt Govt. Automatic, \$17.50. Smith & Wesson .45 Schofield model, new condition, \$25.00. Swiss Vetterli 41 R. F. rifle, fine, \$7.50. Steyr 9 mm. automatic pistol, \$20.00. Mannlicher 7.63 mm. automatic pistol, new condition, \$25.00. Colt P. P. target revolver, fine condition, \$22.50. Remington double deringer, .41 cal., blued, \$7.50. Am able to furnish cartridge collectors with many new rare and obsolete sizes. Write me your wants. W. S. Lutz, 8 S. 18th St., Philadelphia, Pa.

FOR SALE—1 Premo No. 12, 2½ x 3¼ camera, with F. 4.5 Tessar lens. Optimo shutter with film pack, extra plate holders and carrying case. Camera in fine condition and cost \$90.00. First postal order for \$25.00 gets it. I. B. Terry, General Electric Co., Cleveland, Ohio.

FOR SALE—Need the money or they wouldn't be going for these prices. 1 new model 12, 16 ga. Winchester pump, ivory sights, recoil pad, and new leather take-down case, \$95.00. 1 Parker double 12 ga., ivory sights, recoil pad, oiled, finish P. G. checked stock, perfect condition, \$40.00. 1 new No. 54 Lyman sight for 250-3,000, bolt, \$5.00. 1 new Lyman 103 micrometer sight, for Springfield cocking piece, \$6.00. 1 pair new Weiss 8x prism binoculars, with new case and straps, a bargain, \$25.00. F. W. Hadley, Jr., Fillmore, Calif.

FOR SALE—One W. & C. Scott & Son, single barrel trap gun, excellent condition, \$200.00. Wm. Krippner, 17 42nd St., N. Y. C.

FOR SALE—One L. C. Smith, 16 ga., absolutely perfect, \$35.00. One .25-35 Win. carbine, shotgun butt, ivory front, never been shot, but has a few shots of bluing off on receiver, \$25.00. One .22 Colt Auto., perfect, \$25.00, and tools that I will swap or sell for a single action Colt .5½, any calibre but .38-40. One .25-36 tool and mold, and one Krag .30, Model No. 308, 284; one .32 W. C. F. mold, .32 S. & W. tool and mold; one .303 Savage tool and mold; one 16 ga. mold and crimper; .32-20 tool and mold. These are practically new and Ideal make. L. A. Carlson, 122 William St., Jamestown, N. Y.

FOR SALE OR TRADE—One 12 ga. Premier grade Scott double-barrel, hammerless, quail gun, both barrels modified choke, weight 7 lbs.; price, \$175.00. One Williams & Powell heavy 10 ga. goose gun, double barrel, hammerless; price, \$125.00. One Winchester Pope, .32-40, Schuetzen outfit, \$90.00. One Winchester-Schoyen, .33, \$80.00. One Ballard Pope, .32-40, \$120.00. One Sharps-Borchard, .35 Walker barrel, Zischang, set trigger, \$120.00. One Stevens Pope .32-40, 54 model, \$40.00. Will accept in trade .44 S. & W. Special with triple lock and target sights or high-grade full-choke 12 ga. Parker, \$12.00; 10 gr. Diamond grade Daley. E. W. Dodder, 141 Lucas Ave., Los Angeles, Cal.

FOR SALE—One M. L. shotgun, good, 12 ga., double, \$10.00. One as above, needing slight repair, \$5.00. M. L. rifle, .50 cal. mold, rod, 30-in. barrel, sound, \$12.00. Another .32 cal. 38-in. barrel, good, \$10.00. .30-06 ammunition (1918), \$2.50 per 100. A new web gun sling, 75c. Proffitt's Bakery, North Salem, Ind.

FOR SALE—Firearms reloading tool, obsolete ammunition for collectors for sale. Want 12 ga. Win. lever action repeater, condition of barrel in material. Geo. H. Spencer, 1111 Pearl St., Waukesha, Wis.

TRADE—New .300 Savage bolt, extras; sleeping bag, new 20-in. star-gauged .30-06 barrel with ramp for 7 mm. barrel for Mauser or Springfield, binoculars or 6.5 mm. Mannlicher. Harold S. Peterson, 56 Central Ave., East Providence, R. I.

WANTED—Old gun catalogues, gun books: "The Rifle, 1885-1888." **FOR SALE**—Winchester 10 ga., 1901 model, full choke, good order, \$28.00. Winchester, 12 ga., lever action; good order, \$22.00. Remington Hepburn, .45-70, good, \$10.00. Remington Hepburn, .32-40, stock and action good, barrel fair, \$10.00. Colt .44, cap and ball, good order, \$8.00. Ideal tool, adjustable chamber, muzzle rezier, adjustable mold, cal. .28-38, good order, \$5.00. 100 cartridges, non-reloading for Remington, .50 cal. pistol, \$3.00. Reloadable cartridges for above pistol, 8 cents each. .44 rim fire, \$2.00 per 100. .44 C. F. Ballard, \$2.00 per 100. .44 C. F. long F. Wesson, \$2.00 per 100. Ideal shell indenter, .38-55, 50 cents. Reloading tools and molds, .22 W. C. F., .32-40, .38-55, .38-90, .40-82, .45-70, Colt .36 double mold, \$1.25. .54 cal. round, \$1.00. .50-70-450 govt., \$1.75. Fred Wainwright, Grayling, Michigan.

FOR SALE—One Newton .35 rifle. Rifle is in perfect condition. Mounted with quick detachable Girard 4-power scope, reloading tools and some cartridges, \$60.00. Wonderful buy. Also gun case. W. H. Wade, 176 Eaton St., Buffalo, N. Y.

FOR SALE—Damascus barrels for D. H. E. grade Parker, 14 ga., in fine condition, L. improved cyl. r. modified, \$25.00. .475 Winchester, factory loaded brass shells, 14 ga., 6 and 8 shot, \$30.00 or \$50.00 for lot. **FOR SALE OR TRADE**—Kodak, daylight dev. tank, size 3½ x 5½. Wanted, Mauser action, large enough for .30-06 cal., etc. G. Titherington, 1321 S. American St., Stockton, Cal.

FOR SALE—Experimenters' Information Service Navy Model C-10, Superheterodyne, 10-tube receiver, with 10 matched R. C. A. tubes; also Magnavox, Type R, 3, Model D Loud Speaker. Vaughn & Vaughn, Box 226, Gilboa, N. Y.

FOR SALE—One Springfield, 1903, "as issued," crank condition; ivory bead; \$23.00. Winchester S. S., .32-40, No. 3 bbl., good, \$15.00. Shooter's kit box, 18 x 8 x 5 with lock and key; has 18 compartments; fitted with fine 15-X spotting scope and stand, amber shooting glasses and new cleaning implements, \$12.00. Krag, Ross, Springfield butt plates, rear sight swivels, etc. Ross cartridges, 1 cent each. Philip Plaistridge, Winchester, N. H.

FOR SALE—32-20 Model '92, round barrel Winchester rifle, brand new, \$25.00. Bissley Model Colt .45 cal., 5½ in. barrel, like new, \$30.00. **WANTED**—Single-action Army in bad condition; any caliber or length; must be cheap. F. L. Eichholtz, 306 E. River St., Dixon, Ill.

FOR SALE—RAND-McNALLY & CO. IDEAL ATLAS OF THE WORLD, small stock below cost, latest Government census, country maps of every state in U. S., maps of Europe as it was in 1914 and in 1920, size 11 in. x 14 in., 208 pages, bound in green cloth, lettered in gold; should be in every office and home; regular \$5.00 book; sent postpaid and insured for \$2.75. M. M. Conlon, 608 Old Nat. Bk. Bldg., Spokane, Wash.

FOR SALE—44 cal. 1866 Winchester, lever action, barrel pitted, otherwise perfect; also cartridges. W. F. Herzog, Center Moriches, N. Y.

FOR SALE—Ideal D. A. tool, 22 Hi-Power Savage, \$4.00. Ideal mold, 38-55-255, flat nose, \$1.60. Colt's cal. 56 mold, casting one round and one conical ball, perfect, \$3.25. Old Army, cal. 58 mold, hollow base, grooved bullet, perfect, \$2.75. F. A. .30 cal. 5-ball (round) mold, perfect, \$2.75. F. A. .45-70 cal. 4-ball (round) mold, perfect, \$4.25; one in used serviceable order, \$2.75. Spare barrels, cal. .36, Remington C. & B., 7½ in., bores fine, \$1.35. Bannerman's 1913 catalogue, bound, \$2.50. Collection of 100 ancient and modern cartridges, \$5.00; collection of 200 cartridges, \$9.00. Resizing dies: .45-70, \$1.10; .45 Colt, 95 cents; .30 Krag or Springfield neck resizing dies, 65 cents; .22 cal. 7-shot, 10-in. bbl. "US" revolver, \$6.50. .22 cal. 7-shot, 6-in. bbl. H. & R. revolver, \$5.50. .25 cal. H. & R. auto. pistol, \$8.50. .31 Colt C. & B. revolver, \$6.50. .32 rimfire, 5-shot, 6-in. bbl. H. & R. revolver, \$6.50. .32 rimfire, 5-shot, 3-in. bbl. Remington-Smoother side-ejector revolver, \$8.00. .44 Starr C. & B. revolver, \$9.50. .45 Savage auto. pistol, experimental model, \$30.00. .50 Remington Navy pistol, 60 reloadable cartridges, \$14.00. 60 rounds U. M. C. .50 pistol cartridges, \$4.00. Transportation extra. **WANTED**—Ideal tool and mold for .30 Luger; Ideal powder measure No. 6. B. K. Wingate, R-2, Reading, Pa.

WANTED—Ballard action, engraved only. Must be absolutely perfect and price reasonable. State whether loop or spur lever, single or double trigger. Reply to S. M. Milman, 565 Crown St., Brooklyn, N. Y.

WANT TO TRADE—Springfield rifle (1906 etc.), in good condition, original stock cut to sporter, used very little. Win. S. S. 25 rimfire, fair condition, 24 in. round barrel. **WANT**—Colt revolvers .32-20, .38 Spec. or .44 cal., not less than 6 in. barrel, target preferred. F. V. Allen, Cross River, Westchester Co., New York.

WANTED—Muzzle-loading squirrel rifle, .28 or .30 caliber, full stock with set triggers. Must be in very good condition and subject to examination. Give price and full description in letter. L. P. Jennings, R. F. D. 1, Mercer, Pa.

FOR SALE—Brand new .10-75 Mauser sporter with anti-finch recoil pad and forty cartridges. Sell for \$50.00 or best offer. New 8 x 24 Hensoldt binoculars, \$30.00. G. W. Emerson, 4165 W. 25th Pl., Chicago, Ill.

FOR SALE—Springfield Sporter, 30-06 pre-war; stock measurements 13½ x 1½ x 2½; checked steel butt plate and steel P. G. cap; bolt handle turned down and knob flattened; specially adjusted low hunting sights, Marble gold head P. S., Lyman No. 6 folding leaf rear, Lyman 1-A peep on cocking piece with set screw and spring plunger in sleeve to steady same and bring sight always to same position; barrel shows some pitting from use, not neglect, and is accurate for all hunting purposes; price, \$22.00. Marble's Game Getter, 15-in. pre-war model, shot barrel chambered for .410 shot and .44 shot; in fine condition throughout, very little used, barrels like new, peep sight, new leather holster; bargain at \$10.00. **WANT**—Winchester single-shot take-down, .25-20, with barrel in accurate condition. C. D. Christie, 204 Wolvin Bldg., Duluth, Minn.

FOR SALE—Colt .22 auto., same as new, with Audley holster; not a mark inside or out; \$30.00. Remington .22-12 C. N. R. A. rifle, target grade, with Lyman sights, fine shape, Maxim silencer and case, \$28.00. E. Whitaker, 34275 Jefferson Ave., St. Louis, Mo. 3-1-26-F

SALE OR TRADE—Brand new S. & W. .38 Spec., 5 in. blued, revolver, square grips 1925 model, with fine new holster, \$30.00; cost \$37.50, or will trade for new 6-in. same model, or S. & W. .44 Spec., latest model; no Colts. Sell S. & W. .38 Spec., 5-in. square grips, blued, gold monograms, holster worn, but perfect inside, with new holster, \$20.00. O. S. Hatrick, 259 Waverly Ave., Newark, New Jersey.

FOR SALE—22 long rifle Fiala target pistol, 7½ in. barrel, new, fired less than 100 times, very accurate, adjustable sights, \$10.00. P. J. Bailey, 436 W. 29th St., Indianapolis, Ind.

TRADE OR SELL—1 special stocked Springfield, .03-30-06, Serial No. 591819, curly black walnut, sporter stock, nicely checked, full pistol grip, cheek rest, Hawkins recoil pad, Lyman 48 rear sight, ivory bead front sight, inside of barrel perfect; will trade for .22 Springfield barrel; must be perfect, or sell for \$42.00 cash. Also have Rem. 12 ga. auto., bluing worn, but inside of barrel very good; full matted rib; will trade for 17A 20 ga. pump with matted rib in similar condition, or sell for \$40.00 cash. Adolph Koenig, Postville, Iowa.

FOR SALE—Springfield .45-70 carbine, 10 ga. M. L. shotgun, 20 ga. M. L. shotgun, U. S. Cavalry sabre; all in good serviceable condition. First M. O. \$8.00 takes them all. C. L. Winter, Goshen, Ind.

GUN BLUING—Simple 15-minute process, not a paint, used for years, unexcelled, enough for 15 guns, \$1.25. Pacific Arms Corporation, Box 427, San Francisco, Calif.

SHIFT WITH THE HOUSE OF SHIFF, THE GUNMAN, N. Woodstock, N. Hampshire. The last price list for 1925 will be out in a few weeks. Our stock is very complete and summer prices hold until October 1. We are stealing second base from the fanatics. If you can read and FIGHT you will get your money's worth if you care to ship your stamp.

CARTRIDGES—45 Colt, not auto., \$2.50 per 100, \$22.00 per 1,000 (absolutely perfect). 7 mm. Mauser rifle 1-m.p. cartridges, discolored by water, \$4.50 per 100, \$40.00 per 1,000. Pacific Arms Corporation, Box 427, San Francisco, Calif.

WANTED—American Firearms. Hunt up your discarded firearms. Have your friends do likewise. In every family there are firearms discarded as being obsolete. Many times what are considered valueless would be very valuable to me, a collector. Send a list of what you or your friends have. If the pieces are what I want I will offer a price better than any dealer. You can make the dealer's profit if you sell to me. S. Harold Croft, Bala-Cynwyd P. O., Pa.

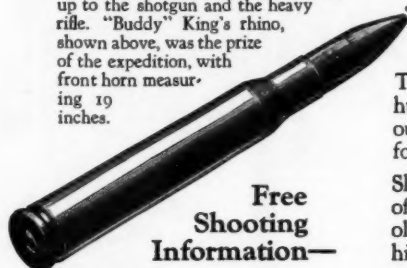
FOR SALE—Maynard .22 using .22-13-45, re-loading tool, mod and 150 empty cases, with tang sight, very good, \$14.50. .25-20 Stevens S. S., excellent, \$13.50. .32-40 Remington, Hepburn action, barrel poor, action and stock excellent, \$8.50. .45-70 Sharps, Borchard action, good, \$10.00. .45-70 Remington-Lee, magazine rifle, short-barreled forearm, 36-inch barrel, good, \$10. .30-40 Winchester S. S. heavy pressure barrel, excellent, \$22.00. .22 Winchester S. S., heavy 22-inch octagonal barrel, B-5 Winchester scope and mounts, very good, \$22.50. .22 Krag, 30-inch, Stevens-Pope barrel, carbine stock, very good, \$14.50. .45-70 Borchard action, incomplete, \$2.50. Krag rifle barrel, excellent, \$2.50. Very heavy .45 caliber rifle barrel, no sight or extractor cuts, chambered for very large cartridge, 30 inches long, octagonal, 1½ inches between faces of octagon, in excellent condition, \$7.50. Bullet molds, .45 4-ball, round, brass, \$3.50; .38-40 W. R. A., \$1.10; .30 8-ball Ideal 308333, gas check, \$4.00. Reloading tools, Ideal .45 Colt, D. A. without mold, with muzzle rezier, \$4.50; .45-70-500 Ideal D. A. with mold, \$4.50; muzzle rezier and muzzle expander for latter tool, \$1.00 each; Bond, .30-40, .30-06 tool complete, \$7.50; .30 cal. Yankee gas check tool complete, for making gas checks, \$5.75. Russian revolver, World War, about 8 mm., relic, \$8.50. Adams revolver, .44 & B., fair, \$8.00. Cartridges: .303 British Mk. VII, \$2.75 per 100; .45 revolver, smokeless, \$1.75 per 100; .25-20 S. S. black, \$1.10 per 100; .30-40 Krag, \$1.75 per 100; .22-15-60, \$1.50 per 100; .50-70 black, \$1.50 per 100; .44 Old Colt, black, \$1.35 per 100. Primers, rifle size, black, \$1.25 per 1,000; smokeless, \$1.50 per 1,000. Bullets: M. J., .30 cal., 220-gr., \$1.50 per 100; .22 cal. S. P., 70-gr., \$1.00 per 100; .25 cal. S. P., 117-gr., \$1.00 per 100; .45-80 empty primed cases, excellent, \$2.50 per 100. Money orders or certified checks; transportation extra. E. D. Regad, Pedricktown, N. J. 807

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**"Buddy" King with Rhino
He Shot in Africa**

Mr. E. L. King, of Winona, Minnesota, believes in making shooting an important part of a boy's education, starting with the .22 and leading up to the shotgun and the heavy rifle. "Buddy" King's rhino, shown above, was the prize of the expedition, with front horn measuring 19 inches.



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... WITH HORN LEVELED TO THRUST AND KILL!!

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Shooting dangerous big game earns the supreme thrill—and demands the utmost of man and gun and ammunition. It was just such a situation in which eleven-year-old "Buddy" King, of Winona, Minnesota, found himself when he accompanied his father and mother, Mr. and Mrs. E. L. King, on a recent safari into Africa. He was armed with WESTERN ammunition and a Springfield rifle—a gun usually considered much too light for such dangerous game. How well boy, gun and bullet acquitted themselves is shown here by the photo of "Buddy" with what proved to be the prize rhino of the expedition.

Open-point Expanding bullets, *Lubaloy* jackets and other exclusive improvements have caused WESTERN ammunition to be selected by most of the important big game expeditions in all parts of the world. They all agree with Mr. King when he says, "The ammunition was entirely satisfactory and dependable." The new *220-grain Tip-o-Lead* soft point for the *.30'06* is proving especially effective.

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Hill 253

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The medal of honor, awarded John L. Barkley, Company K, 4th Infantry, cites the usual "intrepidity above and beyond the call of duty"—the facts being that this cool soldier, after repairing the machine gun, mounted it on the tank, climbed aboard and sat patiently under barrage fire until the Germans were abreast of his position, when he opened fire and completely broke up the attack.

And ten minutes later, still perched stubbornly in the tank, he repeated the act—"thereby enabling our forces to gain and hold Hill 253."

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